SYSTRON DONNER

A THORN EMI company

TABLE OF CONTENTS

		Page
CHAPTER 1 - GENERAL INFORMATION		
1.1	Introduction	1-1
1.2	Specifications	1-1
1.3	Options	1-2
CHAPTER 2 - INSTALLATION		
2.1	Introduction	2-1
2.2	Receiving Inspection	2-1
2.3	Reshipment.	2-1
2.4	Power Requirements	2-2
CHAPTER 3 - OPERATION AND MAINTENANCE		
3.1	Introduction	3-1
3.2	Front Panel Functions	3-1
3.3	Rear Panel Functions	3-3
3.4	Operating Procedures	3-4
3.4.1	Line Power Requirements	3-4
3.4.2	Rate Measurements	3-4
3.4.3	Total Measurements	3-5
3.4.4	BCD	3-5
3.5	Calibration and Maintenance	3-8
3.5.1	Test Equipment	3-8
3.5.2	Oscillator Calibration	3-9
3.5.3	Maintenance	3-9
CHAPTER 4 - PARTS LISTS		
4.1	Introduction	4-1
4.2	Parts List Column Description	4-1
4.3	Manufacturer's Index	4-1
4.4	Parts Lists	4-5
045620-8-1	Final Assembly	4-5
045642-4-1	Test Assembly	4-6
045595-4-1	Chassis Assembly	4-7
045571-4-1	Front Panel Assembly	4-9
045607-4-1	A1, Logic Assembly	4-10
045601-4-1	A2, Amplifier-Power Assembly	4-12
045586-4-3	A3, Readout Assembly, 5 Digit	4-15
045604-4-1	A4, Oscillator P.C. Assembly	4-17
045629-4-1	OPT 06, Battery Pack Assembly	4-18
045635-4-1	OPT 06, Enclosure Assembly.	4-19
045630-4-1	OPT 06, Battery Pack Test Assembly	4-20
045634-4-1	OPT 06, A1, Battery Pack Assembly	4-21
045796-4-1	OPT 07, Power Inverter Assembly	4-22
045625-4-1	OPT 07, A5, Power Inverter Assembly	4-23

TABLE OF CONTENTS (Cont'd)

		Page
CHAPTER 4 - PARTS LISTS (Cont'd)		
045605-4-1	OPT 08, TCXO Oscillator Assembly. . . .	4-24
045586-4-5	OPT 16, Add 2 Digits.	4-25
053056	OPT 31, Rear Input	4-26
045787-4-1	OPT 35, BCD Conversion Assembly	4-27
045603-4-1	OPT 35, BCD Conversion Assembly	4-28
CHAPTER 5 - DRAWINGS		
5.1	Introduction	5-1
045642-4-1	Test Assembly	5-3
045594-5-1	Chassis Assembly	5-4
045571-4-1	Front Panel Assembly	5-5
045602-7-1	Block Diagram Model 6202	5-6
045601-4-1	A2, Amplifier-Power Supply Assembly . .	5-7
045607-7-1	A1, Logic Schematic	5-8
045586-7-3	A3, Readout Schematic	5-9
045604-7-1	A4, Oscillator Schematic	5-10
045630-4-1	OPT 06, Battery Pack Test Assembly . .	5-11
045635-4-1	OPT 06, Enclosure Assembly	5-12
045629-7-1	OPT 06, Battery Pack PC Schematic . . .	5-13
04579641	OPT 07, Power Inverter Assembly	5-14
04562571	OPT 07, A5, Power Inverter Schematic .	5-15
045605-7-1	OPT 08, TCXO Oscillator Schematic . . .	5-16
045602-7-2	OPT 16, Block Diagram	5-17
045586-4-5	OPT 16, Readout Assembly	5-18
053056	OPT 31, Rear Input Assembly	5-19
045787-4-1	OPT 35, Serial to Parallel BCD Conversion Assembly	5-19
045603-4-1	OPT 35, BCD Conversion Assembly	5-20
045603-7-1	OPT 35, BCD Conversion Schematic . . .	5-20
CHAPTER 6 - SPECIAL MODIFICATIONS		
6.1	Introduction	6-1
CHAPTER 7 - SUPPLEMENTAL INFORMATION		
7.1	Introduction	7-1

LIST OF FIGURES

Figure	3.1	Front Panel	3-2
	3.2	Rear Panel	3-2

Page

LIST OF TABLES

Table	1.1	Specifications	1-1
	1.2	Standard Options	1-3
	3.1	Front Panel Functions	3-1
	3.2	Rear Panel Functions	3-3
	3.3	Rear Panel BCD Connector Outputs . . .	3-6
	3.4	Cable BCD Connector (P1)	3-7
	3.5	Recommended Test Equipment	3-9
	4.1	Code-To-Name Cross-Reference	4-1

CHAPTER 1
GENERAL INFORMATION

1.1 INTRODUCTION

The Systron Donner Frequency Counter Model 6202 fits all 20 Hz to 200 kHz counter applications, filling the need for making frequency measurements in industrial plants, on production lines, in school laboratories, in telephone service units, in the field, and in systems.

Automatic gain control (AGC) and autoranging provide a simple automatic "hands off" operating technique with direct digital readout as a major benefit. This elimination of manual input adjustments results in faster and easier frequency measurements. Furthermore, personnel not accustomed to taking frequency measurements can use this mini-counter with the same ability as trained operators.

The AUTOranging RESOLUTION fills the display register within time base limits while automatically selecting maximum frequency resolution. By pushing the MANual switch, the operator can manually select measurement readings with resolutions in four decade steps. By activating the TOTALize switch, the counter will totalize counts over an indefinite period. Starting or stopping any measurement mode can be accomplished manually or by remote control.

The Model 6202 Frequency Counter comes with a group-serial 4-bit BCD output. This standard feature and the full complement of rear panel connectors (External Gate, INTernal Oscillator/EXTernal Oscillator) make this mini-counter a powerful and versatile systems compatible unit.

The readout is highly reliable, seven segment, parallax free display. This readout of five standard and two optional digits features zero suppression which blanks out the leading zeros for easier measurement comprehension.

1.2 SPECIFICATIONS

Table 1.1 lists the specifications applicable to the Model 6202. Standard options available for the instrument are listed in Table 1.2.

TABLE 1.1 SPECIFICATIONS

FREQUENCY MEASUREMENT	
Range:	20 Hz to 200 kHz.
Sensitivity:	25 mV rms.
Resolution:	0.1 Hz to 100 Hz in decade steps.
Accuracy:	±1 count ±time base accuracy.

TABLE 1.1 SPECIFICATIONS (Cont'd)

Display:	kHz with autopositioned decimal point.
TOTALIZE	
Rate Limits:	20 Hz to 200 kHz.
Register Capacity:	10^5 events.
Totalize/Hold:	Manually operated front panel switch.
INPUT CHARACTERISTICS	
Input Impedance:	1 MΩ shunted by 25 pF.
Coupling:	ac
Attenuation:	Step attenuator with factors of X1, X10, X100.
Maximum Input (Without Damage):	500 V peak (dc + ac component). 250 V rms, 20 Hz to 10 kHz; 50 V rms, 10 kHz to 200 kHz.
STANDARD TIME BASE	
Aging Rate:	±3 parts in 10^7 per month.
Temperature Stability:	±5 parts in 10^6 from 0 to 50°C; typically ±2 parts in 10^6 from 20° to 40°C.
Line Voltage:	±1 part in 10^7 for 10% line variation.
External Input:	100 kHz to 10 MHz, 1 V rms into 500 Ω.
GENERAL	
Display:	5 digits standard (7 digits optional).
Display Storage:	Provides continuous display of last reading.
Dimensions:	3 1/4" H x 7" W x 8 1/8" D. (8.26 cm x 17.78 cm x 20.64 cm).
Weight:	5 lbs (2.27 kg), net; 7 1/2 lbs (3.40 kg) shipping.

1.3 OPTIONS

Table 1.2 contains a list of the standard options available for the Model 6202 Frequency Counter.

TABLE 1.2 STANDARD OPTIONS

Option	Description
06	Battery Pack - 4 hour operating cycle with built-in recharging circuit. Increases height to 7 inches.
07	DC Operation - Permits operating from external dc power source of +5.5 to +7.5 V dc @ 2 A with the addition of an internal power inverter.
08	Time Base Oscillator - Improves time base temperature stability to ±1 part in 10^6 from 0 to 50°C.
16	Additional Readout Digits - Adds two (2) readout digits to display.
31	Rear Input BNC - Connects a rear panel input parallel to the front panel input.
35	BCD Conversion Cable - Converts group-serial BCD outputs from the Model 6202 into standard 8-4-2-1 parallel format, including decimal and legend units. Compatible for use with the Systron-Donner Model 5103 Digital Printer.

Digitized by the Internet Archive
in 2025

https://archive.org/details/manualsplus_05187

CHAPTER 2
INSTALLATION

2.1 INTRODUCTION

The SD Model 6202 Frequency Counter is shipped in an operational condition and is essentially ready for use as received. This chapter outlines the procedures for initial inspection and installation of the instrument. Instructions for reshipment are also included should the unit be returned to Systron-Donner Corporation for service or repair.

2.2 RECEIVING INSPECTION

Prior to accepting the counter from the shipper, inspect the condition of the shipping container for any indication of freight damage. Any sign of such damage must be noted by both the shipper and receiver and should be reported to the insurance investigator.

Immediately following removal of the instrument from the shipping carton, inspect for possible physical damage incurred during shipment. Check surfaces for scratches or dents and note condition of controls and connectors. Should any damage be noted, notify your nearest Systron-Donner representative---DO NOT USE THE COUNTER UNTIL INSTRUCTED TO DO SO BY THE REPRESENTATIVE.

2.3 RESHIPMENT

When the instrument is to be repackaged for shipment use the original packing materials. Your Systron-Donner field office can provide materials similar to those used for the original factory packaging, or repackage the instrument following these general instructions:

GENERAL PACKING INSTRUCTIONS

1) Attach a tag to the unit indicating the model number, serial number, name and address of the instrument owner, and a summary of the service or repairs required.
2) Wrap the instrument in heavy paper or plastic prior to placing it into the shipping container.
3) Select a strong carton or wooden box to house the instrument.
4) Use an adequate layer of shock-absorbing material on all sides of the instrument and protect the front panel with additional layers of cardboard. Be certain that there is no movement of the unit within the container.
5) Seal the package with strong tape or metal bands.
6) Mark the shipping container "FRAGILE-DELICATE INSTRUMENT" to ensure careful handling.

7) Be certain that all correspondence refers to full instrument nomenclature (model and serial number).

2.4 POWER REQUIREMENTS

The Model 6202 Frequency Counter is supplied with a standard three-conductor power cord which, when plugged into an appropriate power receptacle, grounds the chassis to protect operating personnel from certain electrical hazards. Whenever the power cord is mated to a two-conductor outlet, a cord adapter plug (properly installed) will provide the same protection.

The instrument operates from either 100, 115, 200, or 230 V at 48 to 440 Hz and consumes approximately 10 W of power. Taps on the primary of the power transformer are provided to accommodate these power line requirements. The instrument is shipped with a .5 ampere fuse internally installed; this fuse is for both 115 V and 230 V operation.

CHAPTER 3
OPERATION AND MAINTENANCE

3.1 INTRODUCTION

The Model 6202 operational discussion includes a functional description of the front and rear panel controls, connectors and indicators along with a step-by-step operating procedure. The unique AGC and autoranging provided by this mini-counter greatly simplifies measurement operation.

3.2 FRONT PANEL FUNCTIONS

Table 3.1, Front Panel Functions, describes the controls, connectors, and indicators on the front panel of the Model 6202 Frequency Counter. Location is shown in Figure 3.1.

TABLE 3.1 FRONT PANEL FUNCTIONS

Index	Name	Function
1	Readout/OFF SCALE (indicator)	This LED indicator lights when the readout exceeds 99999.
2	Readout/Digits (indicator)	These seven segment readout tubes display the measurement data with decimal point location.
3	Readout/GATE (indicator)	This LED indicator flashes showing the opening and closing of the gate.
4	ON (pushbutton switch)	This push on push off switch applies power to counter when depressed.
5	RESOLUTION-AUTO (pushbutton switch)	This interlocked switch, when depressed, places the counter in autorange. Interlocked with MANual switch.
5	RESOLUTION-MAN (pushbutton switch)	This interlocked switch manually sequences the desired resolution each time it is depressed. Interlocked with AUTO switch.
6	RATE (pushbutton switch)	This switch, interlocked with the TOTAL switch, selects the frequency mode of operation.

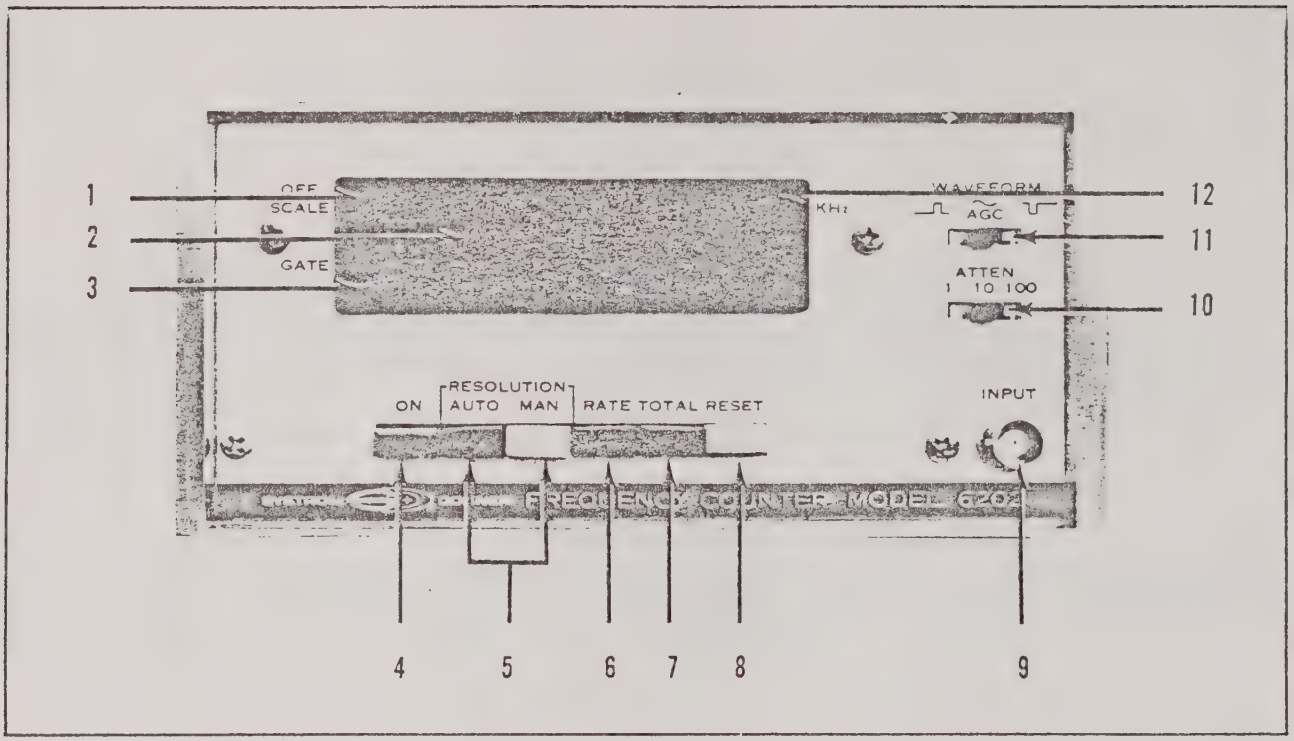


FIGURE 3.1

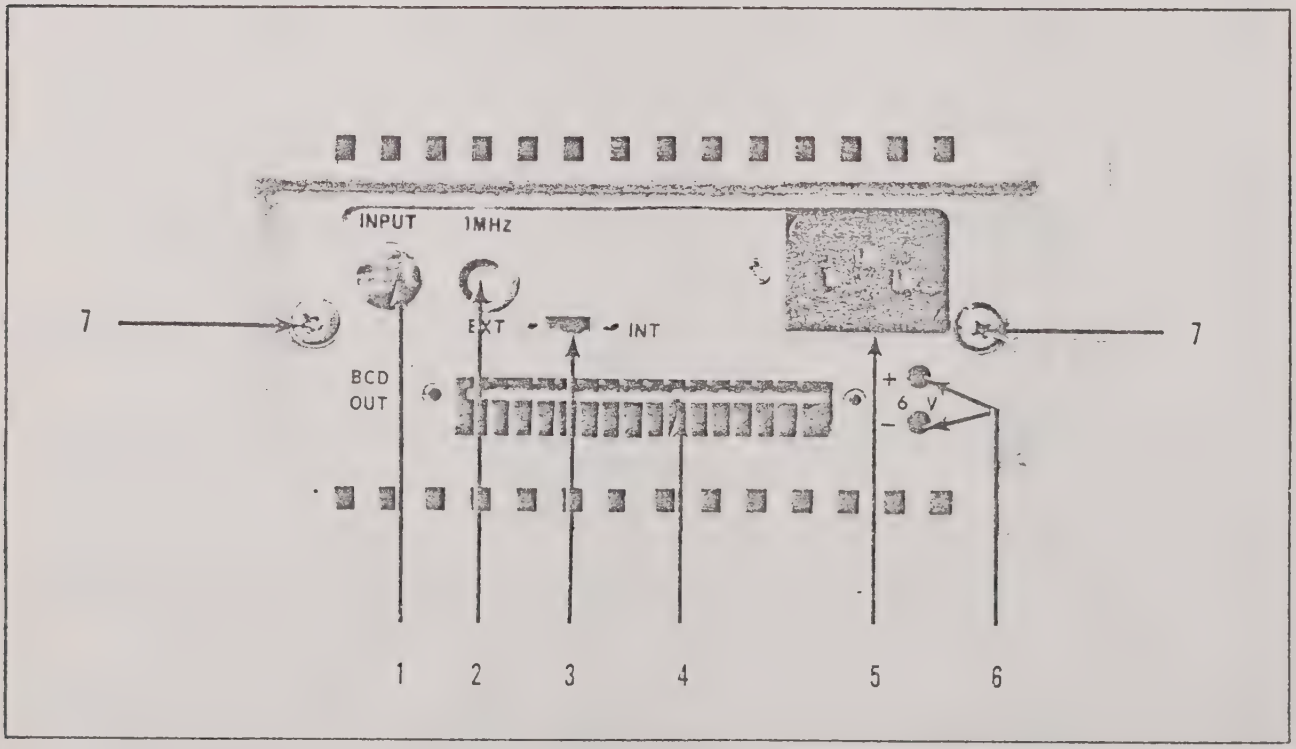


FIGURE 3.2

TABLE 3.1 FRONT PANEL FUNCTIONS (Cont'd)

Index	Name	Function
7	TOTAL (pushbutton switch)	This momentary switch, interlocked with the RATE switch, totalizes events. When depressed the gate is opened to begin totalizing. When again depressed, the switch closes the gate to stop totalizing and hold the display.
8	RESET (pushbutton switch)	This momentary switch resets the count chain when depressed.
9	INPUT (connector)	This BNC connector accepts the input signal to be measured.
10	ATTEN (slide switch)	1, 10, 100: This slide switch selects either X1, X10, or X100 input attenuation factor.
11	WAVEFORM (slide switch)	This slide switch selects the type of input waveform. Either positive pulses, ⎍ , negative pulses ⎍ or AGC sine wave.
12	Readout/KHz (indicator)	This LED indicator shows the units, kHz, when in the RATE mode of operation. It is not lit in the TOTAL mode.

3.3 REAR PANEL FUNCTIONS

Table 3.2, Rear Panel Functions, describes the controls and connectors on the rear panel of the Model 6202 Frequency Counter. Location is shown in Figure 3.2.

TABLE 3.2 REAR PANEL FUNCTIONS

Index	Name	Function
1	INPUT (optional connector)	This optional BNC allows rear panel input of the measurement data.
2	1 MHz (connector)	This BNC connector provides an EXTernal time base input.
3	INT/EXT (slide switch)	This switch selects either the INTernal 1 MHz time base or an EXTernal time base applied to the 1 MHz rear input BNC.

TABLE 3.2 REAR PANEL FUNCTIONS (Cont'd)

Index	Name	Function
4	BCD OUT (connector)	This P.C. board card edge contains terminals which provide the serial 4-bit BCD information.
5	Power Plug Socket (receptacle)	This connector socket allows connection of the ac power to operate the counter.
6	EXT BATT + 6 V - (connectors)	These are the connectors for an external battery when option 07 is installed.
7	Screws, mounting	Case retaining screws. Unfasten for cover removal.

3.4 OPERATING PROCEDURES

There are two operating modes, RATE and TOTAL. RATE allows measurement of frequencies from 20 Hz to 200 kHz and TOTAL allows totalization for a manually selected period of time.

3.4.1 Line Power Requirements

Check to make sure the jumpers on the transformer taps are set correctly for the line voltage available. See Block Diagram #45602-7-1, Page 5-6.

3.4.2 Rate Measurements

To measure a sine wave or repetitive pulses from 20 Hz to 200 kHz set the counter controls as follows:

FRONT PANEL

ON	Depress.
RESOLUTION	Select either AUTO for automatically selected resolution, or MAN for manually sequencing the desired resolution.
RATE	Depress.
RESET	Depress to reset instrument.
WAVEFORM	Select the desired waveform, ⎍ AGC ⎍.
ATTEN	Select 1, 10, or 100 input voltage attenuation.
INPUT	Connect the input signal.

REAR PANEL

INT/EXT	Set this switch to INT for operation on the internal time base or set switch to EXT for external time base.
1 MHz	Connect an external time base, 100 kHz to 10 MHz, 1 V rms into 500 Ω, to this BNC when using the EXT switch position. (1 MHz for proper decimal indication).
EXT BATT	Connect a battery to the + and - 6 V terminals when battery operation is required and the 06 Battery Pack or the 07 DC Operation Options are installed.

3.4.3 Total Measurements

This mode of operation allows the input events to be totalized or accumulated. The gate is manually opened and closed by sequential operation of the TOTAL momentary pushbutton switch. Set the controls for this mode of operation as follows:

FRONT PANEL

ON	Depress.
TOTAL	Depress to defeat RATE and to open and close the gate.
WAVEFORM	Select the desired waveform ⎍ $\widetilde{\text{AGC}}$ ⎍ .
ATTEN	Select 1, 10, or 100 input voltage attenuation.
INPUT	Connect the input signal to this BNC.

REAR PANEL

INT/EXT	Set this switch to INT for operation on the internal time base or set switch to EXT for external time base.
1 MHz	Connect an external time base, 100 kHz to 10 MHz, 1 V rms into 500 Ω, to this BNC when using the EXT switch position.
EXT BATT + 6 V -	Connect a battery to the + and - 6 V terminals when battery operation is required and the 06 Battery Pack or the 07 DC Operation Options are installed.

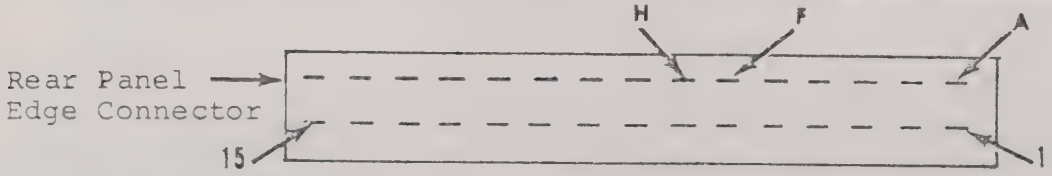
3.4.4 BCD

The Model 6202 has a standard group-serial parallel BCD available on the rear panel P4 connector. The pin and function assignments are listed in Table 3.3. Option 35, BCD Conversion Cable, converts the group serial parallel BCD outputs to a standard 8-4-2-1 parallel for-

mat including decimal placement and legend units. J1 mates with the PC edge P4 on the rear panel and the output is available at the end of the cable on P1, a 50 pin Amphenol connector, 57-40500. The conversion assignments are listed in Table 3.4.

TABLE 3.3 REAR PANEL BCD CONNECTOR OUTPUTS

Pin	Function
B	1 — BCD output of strobed digit.
C	2 — BCD output of strobed digit.
D	4 — BCD output of strobed digit.
E	8 — BCD output of strobed digit.
P	10^0 — Digit Strobe pulse.
N	10^1 — Digit Strobe pulse.
M	10^2 — Digit Strobe pulse.
H	10^3 — Digit Strobe pulse.
F	10^4 — Digit Strobe pulse.
8	10^5 — Digit Strobe pulse. if digits are present
K	10^6 — Digit Strobe pulse. if digits are present
3	1 — Binary weighted decimal location in BCD, +true
2	2 — Binary weighted decimal location in BCD, +true
4	4 — Binary weighted decimal location in BCD, +true
12	KHz Measurement unit, +true.
10	+5 V dc (Warning: limit current to 100 mA).
11	Instrument ground.
6	External Reset. A +5 V to +0.5 V negative true step resets instrument.
J	Inhibit. Closure to <+0.5 V stope recycling. >+2.5 V allows recycle.
R	External Gate. A +5 V level in TOTAL allows count accumulation.
13	Off Scale. A positive level >+2.5 V indicates register overflow.
9	Gate Out. A >+2.5 V level is present when the instrument is counting.
7	Blanking. A <+0.5 V level indicates a digit is suppressed or blanked. >+2.5 V otherwise.
15	Strobe. A clock strobe signal for timing BCD outputs is present.
5	Print Command. This +true, end of measurement signal indicates the data is ready.



Mating connectors are: Cinch-251-15-30-260 or Viking-2VH15/1AN5.

TABLE 3.4 CABLE BCD CONNECTOR (P1)

FUNCTION	BCD	PIN
10^0	1	1
	2	2
	4	26
	8	27
10^1	1	3
	2	4
	4	28
	8	29
10^2	1	5
	2	6
	4	30
	8	31
10^3	1	7
	2	8
	4	32
	8	33
10^4	1	9
	2	10
	4	34
	8	35
10^5	1	11
	2	12
	4	36
	8	37
10^6	1	13
	2	14
	4	38
	8	39
10^7	1	15
	2	16
	4	40
	8	41

TABLE 3.4 CABLE BCD CONNECTOR (P1) (Cont'd)

FUNCTION	BCD	PIN
MU	1	17
	2	18
	4	42
	8	43
DP	1	19
	2	20
	4	44
	8	45

FUNCTION	REMOTE PIN
+ Reference	25
- Reference	24,50
Inhibit	47
Print Command	23

3.5 CALIBRATION AND MAINTENANCE

This section contains procedures for maintenance and calibration of the Model 6202 to aid the user in maintaining the instrument in proper operating condition. Whenever a Systron-Donner instrument requires service, the nearest SD representative should be contacted. He can provide field service, or arrange factory returns, when necessary. Address all inquiries on operation or application to your nearest sales representative; or, Sales Manager:

SYSTRON-DONNER CORPORATION
CONCORD INSTRUMENT DIVISION
10 Systron Drive
Concord, California 94518
Phone: (415) 682-6161
TWX: 910-481-9479
Cable: SYSTRONDONNER

Specify both model and complete serial number in all correspondence.

3.5.1 Test Equipment

Test equipment recommended for maintaining and checking performance is listed in Table 3.5. Equivalent test equipment having similar characteristics may be substituted when necessary.

TABLE 3.5 RECOMMENDED TEST EQUIPMENT

Type	Characteristic	Recommended type
Digital Voltmeter	0.1% dc - 1% ac	SD Model 7005A
Signal Generator	10 Hz to 10 MHz	HP Model 651B
Pulse Generator	1 Hz to 50 MHz	SD Data Pulse Model 116
Frequency Standard	1 MHz Output	General Technology Model 304B

3.5.2 Oscillator Calibration

Periodic adjustment of the internal oscillator is necessary to maintain the accuracy of the Model 6202. To calibrate the oscillator connect a 1 MHz Standard to the INPUT. Adjust A4C10 for a correct readout.

An alternate method for calibration of the oscillator requires the use of an oscilloscope, Fairchild Model 766H, Type 76-08 plug-in and 74-03A Time Base or equivalent. Connect 1 MHz to the EXT INput of the oscilloscope and monitor the output of the oscillator, A4 pin 1. Set the Counter controls, Power on, INT-EXT on INT.

Adjust A4C4 so the waveform momentarily stops drifting.

3.5.3 Maintenance

To remove the cover from the unit remove the two mounting screws from the rear panel and slide the cover carefully to the rear.

To adjust the Amplifier/Power Supply Assembly, A2, perform the following sequence:

1) Check voltages: +5.0 V on pin 7 (+4.75 V to +5.25 V), -12 V on pin 5 (-11 V to -13.5 V), +180 V (±10%) where shown on schematic #45601-7-1.
2) With DVM; monitor A2TP1, adjust R3 for a reading of 2.0 V dc ± 100 mV. Monitor A2TP3, select R38, nominal 8.2 k, to obtain a reading of 10.00 V dc to 10.4 V dc.
3) Connect the 10 Hz to 10 MHz signal generator to the INPUT. Adjust the signal generator for an output of 200 kHz at 100 mV. WAVEFORM to AGC, EXT/INT to INT, RATE, AUTO depressed and ATTEN to X1. Adjust A2R23 (T.L.) for a reading of 200.00 kHz. Decrease input level and adjust A2R23 for best sensitivity.
4) Connect the pulse generator to the INPUT. ATTEN to X1, set WAVEFORM to ⎍, observe proper counting. Set WAVEFORM to ⎏, observe proper counting.

CHAPTER 4
PARTS LISTS

4.1 INTRODUCTION

This chapter contains a parts list for each assembly drawing in chapter 5. General parts lists column descriptions and a manufacturers code-to-name index is also provided in sections 4.2 and 4.3.

4.2 PARTS LIST COLUMN DESCRIPTION

Each column in the parts list provides specific information relating to the listed parts as follows:

1) DESIGNATOR: Ballooned item assemblies list parts in numerical order. Reference numbers applicable to assemblies are listed in alpha-numeric order.
2) COMPONENT NOMENCLATURE AND DESCRIPTION: Component names and specifications are provided in these columns and include: value, tolerance, wattage rating, working voltage, construction, etc.
3) MANUFACTURER'S CODE: H4-2 Federal Supply Code numbers are listed to identify component manufacturers. A Manufacturer's Index is provided in this chapter for cross-reference.
4) MANUFACTURER'S PART NUMBER: True manufacturer part numbers are listed in this column.
5) SD STOCK NUMBER: The Systron-Donner stock number is listed in this column.
6) T/Q (Total Quantity): This quantity, appearing after an item entry, indicates the number of times the item is used in that component.

4.3 MANUFACTURER'S INDEX

TABLE 4.1 CODE-TO-NAME CROSS-REFERENCE

Code	Name	Address
00779	Amp Inc.	P.O. Box 3608, Harrisburg, Pa. 17105
01121	Allen-Bradley Co.	1201 S. 2nd St., Milwaukee, Wis. 53204
01295	Texas Instruments Inc.	13500 N. Central Expressway Dallas, Texas 75231
01537	Motorola Comm. & Electronics Inc.	4500 W. Augusta Blvd., Chicago Ill. 60651

TABLE 4.1 CODE-TO-NAME CROSS-REFERENCE (Cont'd)

Code	Name	Address
02660	Amphenol Corp.	2801 S. 25th Ave., Broadview, Ill. 60153
03508	General Electric Co. Semiconductor Products	Electronics Park, Syracuse, N.Y. 13201
03877	Transitron Electronic Corp.	168-186 Albion St., Wakefield, Mass. 01880
04713	Motorola Semiconductor Products, Inc.	5005 E. McDowell Rd., Phoenix, Arizona 85008
05574	Viking Industries Inc.	21001 Nordhoff, Chatsworth, Ca. 91311
06383	Panduit Corp.	17301 Ridgeland, Tinley Park, Ill. 60477
06540	Amatom Electronic Hardware, Div. of Mite Corp.	81 Rockdale Ave., New Rochelle, N.Y. 10806
07047	Ross Milton Co.	511 2nd St. Pike, Southampton, Pa. 18966
07263	Fairchild Camera & Inst Corp., Semiconductor	313 Frontage Rd., Mt. View, Ca. 94040
07707	USM Corp Fastener Div.	Shelton, Conn.
12014	Chicago Rivet & Machine Co.	950 S. 25th Ave., Bellwood, Ill. 60104
12136	Philadelphia Handle Co.	1643 Haddon Ave., Camden, N.J. 08103
13324	Herculite Protective Fabrics Inc.	1107 Broadway, New York, N.Y. 10010
13715	Fairchild Camera & Inst Corp. Semiconductor	4300 Redwood Hwy., San Rafael, Calif. 94903
14814	Eldorado Electrodata Corp.	601 Chalomar Rd., Concord, Cal. 94518
16258	Space Lok Inc.	2526 N. Ontario, Burbank, Cal. 91504
19701	Electra/Midland Corp.	P.O. Box 760, Mineral Wells, Tx. 76067
21604	Buckeye Stamping Co.	555 Marion Rd., Columbus, Ohio 43207
25244	Globe-Union Inc.	P.O. Box 591, Milwaukee, Wis. 53201

TABLE 4.1 CODE-TO-NAME CROSS-REFERENCE (Cont'd)

Code	Name	Address
27014	Nat'l Semiconductor Corp.	2950 San Ysidro Way, Santa Clara Calif. 95051
27264	Molex Products Co.	5224 Katrine Ave., Downers Grove Ill. 60515
28480	Hewlett-Packard Co.	1501 Page Mill Rd., Palo Alto, Calif. 94304
28520	Heyman Mfg. Co.	147 N. Michigan Ave., Kenilworth, N.J. 07033
50088	Mostek Corp.	1400 Upfield Dr., Carrollton, Texas 75006
52542	Systron-Donner Corp.	10 Systron Dr., Concord, Calif. 94518
56289	Sprague Electronic Co.	North Adams, Mass. 01247
70903	Belden Corp.	415 S. Kilpatrick, Chicago, Ill. 60644
71590	Globe-Union Inc. Centralab Div.	P.O. Box 591, Milwaukee, Wis. 53201
71785	Cinch Mfg. Co. & Howard B. Jones Div.	1026 S. Homan Ave., Chicago, Ill. 60624
72136	Electro Motive Mfg.	S. Park & John Sts., Willimantic, Conn. 06226
72259	Nytronics Inc.	550 Springfield Ave., Berkeley Heights, N.J. 07922
72982	Erie Technological Products Inc.	644 W. 12th St., Erie, Pa. 16512
73138	Beckman Instruments Inc Helipot Div.	2500 Harbor Blvd, Fullerton, Calif. 92634
73734	Federal Screw Products	3917 N. Kenzie Ave., Chicago, Ill. 60618
74970	Johnson E.F. Co.	299 10th Ave., S.W., Waseco, Minn. 56093
75915	Littlefuse Inc.	800 E. Northwest Hwy, Des Plaines, Ill. 60016
76381	Minnesota Mining & Meg Co.	3M Center, St. Paul, Minn. 55101
76493	Miller J.W. Co.	P.O. Box 5825, 19070 Reyes Ave., Compton, Calif. 90024

TABLE 4.1 CODE-TO-NAME CROSS-REFERENCE (Cont'd)

Code	Name	Address
78187	Standard Horse Nail Corp.	P.O. Box 316, New Brighton, Pa. 15066
78189	Illinois Tool Works Inc. Shakeproof Div.	St. Charles Rd., Elgin, Ill. 60126
79727	Continental-Wirt Electronics, Corp.	26 W. Queen St., Philadelphia, Pa. 19144
80294	Bourns Inc.	1200 Columbia Ave., Riverside, Calif. 92507
82389	Switchcraft Inc.	5555 N. Elston Ave., Chicago, Ill. 60630
83330	Smith Herman H. Inc.	812 Snediker Ave., Brooklyn, N.Y. 11207
86928	Seastrom Mfg. Co. Inc.	701 Sonora Ave., Glendale, Calif. 91201
88245	Litton Precision Prod. Div. Litton Industries	13536 Saticoy St., Van Nuys, Calif. 91409
91418	Radio Materials Co.	4242 W. Bryn Mawr, Chicago, Ill 60646
91637	Dale Electronics Inc.	P.O. Box 609, Columbus, Neb. 68601
92825	Whitso Inc.	9330 Bryon St., Schiller Park, Ill. 60176
95987	Weckesser Co. Inc.	4444 W. Irving Park Rd., Chicago, Ill. 60641
99515	Marshall Industries	1960 Walker Ave., Morovia, Calif. 91016

4.4 PARTS LISTS

EQUIPMENT/ASSEMBLY DESIGNATION: Final Assembly #045620-8-1

(1) DESIGNATOR ITEM	(1) DESIGNATOR REF	(2) COMPONENT NOMENCLATURE AND DESCRIPTION	(3) MFR'S CODE	(4) MANUFACTURER'S PART NUMBER	(5) SD STOCK NO.	(6) T/Q
		BLOCK DIAGRAM		045620-7-1	045620-7-1	REF
		ASSEMBLY, TEST	52542	045643-4-1	045643-4-1	1
		CASE, GOLD AMORITE FINISH	52542	045579-1-1	045579-1-1	1
						1
		SCREW, PAN HEAD MACHINE	MIL	MS51957-28	H0989	2
		WASHER, #6 flat	MIL	MS15795-805	H0759	2
		WASHER, #6 split	MIL	MS35338-136	H0783	2
		FOOT	14814	5999-005949	H2080	4
		CORD, LINE, 8ft, 3 X 18	70903	BR-1736	W0095	1
		LABEL, IDENTIFICATION	52542	037112	037112	1
		MOLDING, LENS	52542	045593-6-1	045593-6-1	1
		OPTIONS				
	OPT 06	PACK, BATTERY			045629-4-1	REF
	OPT 07	ASSEMBLY, POWER INVERTER			045696-4-1	REF
	OPT 08	TCXO OSCILLATOR ASSEMBLY			045605-4-1	REF
	OPT 16	ADD 2 DIGITS			045586-4-5	REF
	OPT 31	ASSEMBLY, REAR INPUT			053056	REF
	OPT 35	ASSEMBLY, BCD CONVERSION			045787-4-1	REF

4.4 PARTS LISTS

EQUIPMENT/ASSEMBLY DESIGNATION: Test Assembly #045642-4-1

(1) DESIGNATOR ITEM	(1) DESIGNATOR REF	(2) COMPONENT NOMENCLATURE AND DESCRIPTION	(3) MFR'S CODE	(4) MANUFACTURER'S PART NUMBER	(5) SD STOCK NO.	(6) T/Q
1		ASSEMBLY, FRONT PANEL	52542	045571-4-1	045571-4-1	1
2		ASSEMBLY, CHASSIS	52542	045595-4-1	045595-4-1	1
3	A1	ASSEMBLY, LOGIC P.C.	52542	045607-4-1	045607-4-1	1
4		SHIELD, AMPLIFIER	52542	045646-1-1	045646-1-1	1
5		CLAMP, CABLE 1/8	83330	8955	102831	1
6		SCREW, PAN HEAD MACHINE: 4-40 X 1/4	MIL	MS51957-13	H0440	3
7		SCREW, FLAT HEAD MACHINE: 6-32 X 3/8	MIL	MS24693-C26	H0379	2
8		SCREW, PAN HEAD MACHINE: 6-32 X 7/16	MIL	MS51957-29	H1697	2
9		WASHER, #4 split-lock	MIL	MS35338-135	H0782	3
10		WASHER, MYLAR	86928	5622-9-7	H1838	2
11		WASHER, #6 flat	MIL	MS15795-805	H0759	1
12		NUT, KEP, 6-32	78187	511-061800-00	H1736	1
13		SCREW, PAN HEAD MACHINE: 6-32 X 5/8	MIL	MS51957-31	H0966	4
14		WASHER, #6 split-lock	MIL	MS35338-136	H0783	4
15		SPACER, SWAGE #6 X 3/8	52542	H1874	H1874	4

4.4 PARTS LISTS

EQUIPMENT/ASSEMBLY DESIGNATION: Chassis Assembly #045595-4-1

(1) DESIGNATOR ITEM	(1) DESIGNATOR REF	(2) COMPONENT NOMENCLATURE AND DESCRIPTION	(3) MFR'S CODE	(4) MANUFACTURER'S PART NUMBER	(5) SD STOCK NO.	(6) T/Q
1		CHASSIS			045595-1-1	1
2	T1	TRANSFORMER, SPECIFICATIONS			045551-6-1	1
3		SCREW, PAN HEAD MACHINE: 6-32 X 1 1/4	MIL	MS51957-35	H1678	4
4		WASHER, #6 split-lock	MIL	MS35338-136	H0783	9
5		WASHER, #6 flat	MIL	MS15795-805	H0759	5
6	J3	RECEPTACLE, AC	82389	EAC-301	J0664	1
7		SCREW, FLAT HEAD MACHINE: 4-40 X 3/8	MIL	MS24693-C4	H0745	2
8		RECEPTACLE, BNC	52542	UG-1094/U	J0165	1
9		LUG, GROUND	83330	1497	E0137	1
10		NUT, HEX 4-40 X 3/16		NAS671C4	H0249	2
12	S4	SWITCH, SLIDE IPDT	79727	G-111-SPDT	S0356	1
13		RIVET, .008 X 5/32	12014	By description	H1839	2
14	XF1	FUSE, BLOCK	75915	357001	X0194	1
15		SCREW, PAN HEAD MACHINE: 4-40 X 5/16	MIL	MS51957-14	H1273	2
16		WASHER, #4 split-lock	MIL	MS35338-135	H0782	4
17	F1	FUSE, 3AGMB 1/2 A 250 V	75195	312.500	F0044	1
18	TB1,2	TERMINAL, STRIP 3 LUG	71785	332-14-04-061	H2073	2
19		RIVET, POP 1/8 X 1/4	07707	SSD-42-SSBS	H0914	4
20	TB3	TERMINAL, STRIP 4 LUG	71785	2003	H2074	1
21	TB4	TERMINAL, STRIP 3 LUG	71785	52A	H0494	1
22		RIVET, 1/8 X 5/32	12014	R-3472X5/32NICL	H0437	2
23		STANDOFF SWAGE 6-32 X 1/4	16258	73-3	E0197	6
24		STANDOFF SWAGE 6-32 X 1/8	06540	9531-A-0632	H2075	6
25		GROMMET, .375	28520	SB-375-4	H1244	1
26		PLUG, BUTTON	83330	652	H1667	1
27	L1,2	CHOKE, 100 μH 20%, .216 Ω 2 amp	76493	5250	L0166	2
28†	C4,C8	CAPACITOR, 2 X .005 μF	56289	125L2D50/29C147	03289940	2
		†NOTE: IF ITEM 28 NOT SUPPLIED USE ITEM 53				
29	C5	CAPACITOR, 20 μF +50-10%, 350 V	56289	39D206F350FL4	C1094	1
30	C6	CAPACITOR, 2500 μF +75-10%, 15 V	56289	39D258G015GP4	C1148	1
31	A4	ASSEMBLY, P.C. OSCILLATOR	52542	04560441	45604-4-1	1
32	A2	ASSEMBLY, P.C. AMPLIFIER/PS BOARD	52542	04560141	45601-4-1	1
33		CLAMP, CABLE 1/8	83330	8955	102831	1
34		SCREW, PAN HEAD MACHINE: 6-32 X 7/16	MIL	MS51957-29	H1697	1
35		SCREW, PAN HEAD MACHINE: 6-32 X 3/8	MIL	MS51957-28	H0989	2
37		SCREW, PAN HEAD MACHINE: 6-32 X 1/4	MIL	MS51957-26	H0986	1
38*	U1	INTEGRATED CIRCUIT	52542		45582-6-1	1
		**NOTE: IF ITEM 38 NOT SUPPLIED USE ITEMS 46 THRU 52*				
39	Q1	TRANSISTOR, Silicon PNP 2N5193	04713	2N5193	Q0300	1
41		SCREW, PAN HEAD MACHINE: 4-40 X 3/16	MIL	MS51957-12	H1120	1
42		WASHER, #4 flat	MIL	MS15795-803	H0758	3

EQUIPMENT/ASSEMBLY DESIGNATION Chassis Assembly #045595-4-1 (Cont'd)

(1) DESIGNATOR ITEM	(1) DESIGNATOR REF	(2) COMPONENT NOMENCLATURE AND DESCRIPTION	(3) MFR'S CODE	(4) MANUFACTURER'S PART NUMBER	(5) SD STOCK NO.	(6) T/Q
44		SCREW, PAN HEAD MACHINE: 6-32 X 5/8	MIL	MS51957-31	H0966	1
45	R5	RESISTOR, COMP: 560 k 5%, 1/4 W	01121	CB5645	R1321	1
46	U1	INTEGRATED CIRCUIT	27014	LM309K	25787	1
48		SCREW, PAN HEAD MACHINE: 6-32 X 3/8	MIL	MS51957-28	H0989	2
49		NUT, HEX 6-32		NAS671C6	H0380	2
50		WASHER, #6 flat	MIL	MS15795-805	H0759	2
51		WASHER, #6 split	MIL	MS35338-136	H0783	1
52		LUG, SOLDER #6	83330	1413-6	E0111	1
53	C4 A&B, C5 A&B	CAPACITOR, .005 µF, 1.4 kV	71590	CI-502	102823	4

4.4 PARTS LISTS

EQUIPMENT/ASSEMBLY DESIGNATION: Front Panel Assembly #045571-4-1

(1) DESIGNATOR ITEM	(1) DESIGNATOR REF	(2) COMPONENT NOMENCLATURE AND DESCRIPTION	(3) MFR'S CODE	(4) MANUFACTURER'S PART NUMBER	(5) SD STOCK NO.	(6) T/Q
1		PANEL, DECORATIVE	52542	045571-1-1	045571-1-1	1
2		PANEL, CAST FINISHED	52542	045609-1-1	045609-1-1	1
3		BRACKET, HINGE	52542	045596-1-1	045596-1-1	1
4		HINGE	52542	045598-1-1	045598-1-1	1
5		RIVET, OV.H. 1/8 X 1/8	12014	R-3472X1/8 NICL	H0404	4
6		SCREW, PAN HEAD MACHINE: 6-32 X 3/16	MIL	MS51957-25	H0436	2
7		WASHER, MYLAR	86928	5622-9-7	H1838	2
8		SCREW, PAN HEAD MACHINE: 6-32 X 1/2	MIL	MS51957-30	H0283	2
9		MOLDING, LENS	52542	045593-6-1	045593-6-1	1
10	S2,3	SWITCH, SLIDE	79727	G-128L-DP3POS	05036570	2
11	J1	RECEPTACLE, BNC	52542	UG-1094/U	J0165	1
12		LUG, GROUND	83330	1497	E1037	1
13		WASHER, LOCK, 3/8	78189	1220-02 CAD	H0507	1
14	C7	CAPACITOR, .1 uF 20%, 600 V	99515	D6-104	C0791	1
15	C3	CAPACITOR, DISC, CERAMIC: 2 pF 10%, 500 V	91418	TYPE C	C0261	1
16	C2	CAPACITOR, DISC MICA: 20 pF 5%, 500 V	72136	DM15ED200J0	03175100	1
17	C1	CAPACITOR, DISC MICA: 220 pF 5%, 500 V	72136	DM15FD221J0	C1077	1
18	R2	RESISTOR, COMP: 20 k 5%, 1/4 W	01121	CB2035	R0964	1
19	R1	RESISTOR, COMP: 39 k 5%, 1/4 W	01121	CB3935	R0748	1
20	R3	RESISTOR, COMP: 200 k 5%, 1/4 W	01121	CB2045	R0823	1
21	R4	RESISTOR, COMP: 2.0 M 5%, 1/4 W	01121	CB2055	R1427	1
22		CABLE, FRONT PANEL	52542	045572-3-1	045572-3-1	1
23		CLAMP, CABLE, 1/8	83330	8955	102831	1
24		ASSEMBLY, P.C. READOUT	52542	045586-4-3	045586-4-3	1
25		CABLE, READOUT	52542	045586-3-2	045586-3-2	1
26		CLAMP, CABLE 5/16	95987	5/16-4NA	H0790	1
27		NOT USED				
28		WASHER, #6 split-lock	MIL	MS35338-136	H0783	2
29		WASHER, #6 flat	MIL	MS15795-805	H0759	2

4.4 PARTS LISTS

EQUIPMENT/ASSEMBLY DESIGNATION A1, Logic Assembly #045607-4-1

(1) DESIGNATOR ITEM	(1) DESIGNATOR REF	(2) COMPONENT NOMENCLATURE AND DESCRIPTION	(3) MFR'S CODE	(4) MANUFACTURER'S PART NUMBER	(5) SG STOCK NO.	(6) T/Q
		BOARD, P.C., SPECIFICATIONS	52542	045607-1-1	045607-1-1	1
	C1	CAPACITOR, DISC, CERAMIC: .05 uF +80-20%, 10 V	71590	UK10-503	C0672	9
	C2	CAPACITOR, TANT 4.7 uF 10%, 10 V	56289	150D475X9010A2	C1011	1
	C3	CAPACITOR, DISC, CERAMIC: .05 uF +80-20%, 10 V	71590	UK10-503	C0672	9
	C4	CAPACITOR, DISC, CERAMIC: .05 uF +80-20%, 10 V	71590	UK10-503	C0672	9
	C5	CAPACITOR, DISC, CERAMIC: 1. uF 20%, 25 V	56289	5C023105X0250B3	C0879	1
	C6	CAPACITOR, DISC, CERAMIC: .05 uF +80-20%, 10 V	71590	UK10-503	C0672	9
	C7	CAPACITOR, DISC, CERAMIC: .05 uF +80-20%, 10 V	71590	UK10-503	C0672	9
	C8	CAPACITOR, DISC, CERAMIC: .05 uF +80-20%, 10 V	71590	UK10-503	C0672	9
	C9	CAPACITOR, DISC, CERAMIC: .05 uF +80-20%, 10 V	71590	UK10-503	C0672	9
	C10	CAPACITOR, DISC, CERAMIC: .05 uF +80-20%, 10 V	71590	UK10-503	C0672	9
	C11	CAPACITOR, DISC, CERAMIC: .05 uF +80-20%, 10 V	71590	UK10-503	C0672	9
	C12	CAPACITOR, DISC, CERAMIC: 1000 pF 20%, 1 kV	91418	TYPE B	C0424	4
	C13	CAPACITOR, DISC, CERAMIC: 1000 pF 20%, 1 kV	91418	TYPE B	C0424	4
	C14	CAPACITOR, DISC, CERAMIC: 1000 pF 20%, 1 kV	91418	TYPE B	C0424	4
	C15	CAPACITOR, DISC, CERAMIC: 1000 pF 20%, 1 kV	91418	TYPE B	C0424	4
	CR1	DIODE, SINGLE: 1N4151 50 V	03508	1N4151	CR0150	4
	CR2	DIODE, SINGLE: 1N4151 50 V	03508	1N4151	CR0150	4
	CR3	DIODE, SINGLE: 1N4151 50 V	03508	1N4151	CR0150	4
	CR4	DIODE, SINGLE: 1N4151 50 V	03508	1N4151	CR0150	4
	Q1	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, NPN	07263	2N3646	Q0218	2
	Q2	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, NPN	07263	2N3646	Q0218	2
	R1	RESISTOR, COMP: 470 Ω 5%, 1/4 W	01121	CB4715	R1044	1
	R2	RESISTOR, COMP: 47 k 5%, 1/4 W	01121	CB4735	R0777	4
	R3	RESISTOR, COMP: 47 k 5%, 1/4 W	01121	CB4735	R0777	4
	R4	RESISTOR, COMP: 47 k 5%, 1/4 W	01121	CB4735	R0777	4
	R5	RESISTOR, COMP: 47 k 5%, 1/4 W	01121	CB4735	R0777	4
	R6	RESISTOR, COMP: 1.2 k 5%, 1/4 W	01121	CB1225	R0809	2
	R7	RESISTOR, COMP: 1.2 k 5%, 1/4 W	01121	CB1225	R0809	2
	R8	RESISTOR, COMP: 4.7 k 5%, 1/4 W	01121	CB4725	R0892	1
	U1	INTEGRATED CIRCUIT: DEC/STORE Tri-State TTL	27014	DM85L52N	045212	5
	U2	INTEGRATED CIRCUIT: DEC/STORE Tri-State TTL	27014	DM85L52N	045212	5
	U3	INTEGRATED CIRCUIT: DEC/STORE Tri-State TTL	27014	DM85L52N	045212	5
	U4	INTEGRATED CIRCUIT: DEC/STORE Tri-State TTL	27014	DM85L52N	045212	5
	U5	INTEGRATED CIRCUIT: DEC/STORE Tri-State TTL	27014	DM85152N	045212	5

EQUIPMENT/ASSEMBLY DESIGNATION A1, Logic Assembly #045607-4-1 (Cont'd)

(1) DESIGNATOR ITEM	(1) DESIGNATOR REF	(2) COMPONENT NOMENCLATURE AND DESCRIPTION	(3) MFR'S CODE	(4) MANUFACTURER'S PART NUMBER	(5) SD STOCK NO.	(6) T/Q
	U6	NOT USED				
	U7	NOT USED				
	U8	INTEGRATED CIRCUIT: Dual VC Multivibrator TTL	04713	MC4024P	045206	1
	U9	INTEGRATED CIRCUIT: Binary Center TTL	13324	N8281A	025727	2
	U10	INTEGRATED CIRCUIT: BCD-DECIMAL DECODER TTL	01295	SN7442N	025749	2
	U11	INTEGRATED CIRCUIT: Quad 2-input NAND gates, DTL	01295	SN15846N	019716	4
	U12	INTEGRATED CIRCUIT: Hex Inv. 6 K pull-ups DTL	04713	MC836P	025704	1
	U13	INTEGRATED CIRCUIT: Quad 2-input AND gates, TTL	04713	MC3001P	025740	2
	U14	INTEGRATED CIRCUIT: Quad 2-input OR gates, DTL	04713	MC1808P	025734	1
	U15	INTEGRATED CIRCUIT: Quad 2-input NOR gates, DTL	04713	MC1810P	025735	1
	U16	INTEGRATED CIRCUIT: Quad 2-input NAND gates, DTL	01295	SN15846N	019716	4
	U17	INTEGRATED CIRCUIT: Quad 2-input AND gates, TTL	04713	MC3001P	025740	2
	U18	INTEGRATED CIRCUIT: Quad 2-input OR gates, TTL	04713	MC3003P	025767	1
	U19	INTEGRATED CIRCUIT: BCD-DECIMAL DECODER TTL	01295	SN7442N	025749	2
	U20	INTEGRATED CIRCUIT: Quad Latch, TTL	01295	SN7475N	019710	1
	U21	INTEGRATED CIRCUIT: Dual D, flip-flop, TTL	01295	SN7474N	025241	4
	U22	INTEGRATED CIRCUIT: Dual D, flip-flop, TTL	01295	SN7474N	025241	4
	U23	INTEGRATED CIRCUIT: Quad 2-input NAND gates, DTL	01295	SN15846N	019716	4
	U24	INTEGRATED CIRCUIT: Dual one-shot Multivibrator, TTL	01295	SN74123N	045209	2
	U25	INTEGRATED CIRCUIT: Dual one-shot Multivibrator, TTL	01295	SN74123N	045209	2
	U26	INTEGRATED CIRCUIT: Quad 2-input EXCL. OR GT, TTL	04713	MC3021P	025789	1
	U27	INTEGRATED CIRCUIT: Quad 2-input AND gates, DTL	04713	MC1806P	025733	1
	U28	INTEGRATED CIRCUIT: Binary Center TTL	13324	N8281A	025727	2
	U29	INTEGRATED CIRCUIT: Counter Timebase PGMable, MOS	50088	MK5009	045214	1
	U30	INTEGRATED CIRCUIT: Quad 2-input NOR gates, TTL	04713	MC3002P	025739	1
	U31	INTEGRATED CIRCUIT: Quad 2-input NAND gates, DTL	01295	SN15846N	019716	4
	U32	INTEGRATED CIRCUIT: Dual D, flip-flop, TTL	01295	SN7474N	025241	4
	U33	INTEGRATED CIRCUIT: Dual D, flip-flop, TTL	01295	SN7474N	025241	4
	S1	SWITCH, ASSEMBLY, PUSHBUTTON	52542	045591-6-1	045591-6-1	1
		CONNECTOR, P.C. PIN: 15-pin MALE	27264	09-64-1152	J0663	2
		SPECIFICATIONS, P.C. BOARD: BCD TAB	52542	045592-1-1	045592-1-1	1
		SPACER, SWAGE: 6-32	88245	1530 B 5/8	E0228	2
		SPACER, RIGHT ANGLE: 6-32	88245	1590 B	E0117	4

4.4 PARTS LISTS

EQUIPMENT/ASSEMBLY DESIGNATION: A2, Amplifier-Power Assembly #045601-4-1

(1) DESIGNATOR ITEM	(1) DESIGNATOR REF	(2) COMPONENT NOMENCLATURE AND DESCRIPTION	(3) MFR'S CODE	(4) MANUFACTURER'S PART NUMBER	(5) SD STOCK NO.	(6) T/Q
		SPECIFICATIONS, P.C. BOARD	52542	045601-1-1	045601-1-1	1
	C1	CAPACITOR, TANT: 1 µF 10%, 35 V	56289	150D105X9035A2	C0524	3
	C2	CAPACITOR, EL AX: 1000 µF +75-10%, 25 V	56289	TE1211	C0832	4
	C3	CAPACITOR, DISC, CERAMIC: .01 µF +80-20%, 100 V	91418	TA110	C0556	4
	C4	CAPACITOR, MICA: 12 pF 5%, 500 V	72136	DM15CD120JO	C1141	1
	C5	CAPACITOR, EL AX: 200 µF +75%-10%, 15 V	56289	TE1164	C0981	1
	C6	CAPACITOR, EL AX: 1000 µF +75-10%, 25 V	56289	TE1211	C0832	4
	C7	CAPACITOR, EL AX: 1000 µF +75%-10%, 25 V	56289	TE1211	C0832	4
	C8	CAPACITOR, DISC, CERAMIC: 1. µF 20%, 25 V	56289	5C023105X0250B3	C0879	3
	C9	CAPACITOR, DISC, CERAMIC: .01 µF +80-20%, 100 V	91418	TA110	C0556	4
	C10	CAPACITOR, TANT: 39 µF 10%, 10 V	56289	150D396X9010B2	C0902	2
	C11	CAPACITOR, DISC, CERAMIC: 1. µF 20%, 25 V	56289	5C023105X0250B3	C0879	3
	C12	CAPACITOR, DISC, CERAMIC: .1 µF +80-20%, 10 V	71590	UK10-104	C0661	3
	C13	CAPACITOR, DISC, CERAMIC: .1 µF +80-20%, 10 V	71590	UK10-104	C0661	3
	C14	CAPACITOR, DISC, CERAMIC: .1 µF +80-20%, 10 V	71590	UK10-104	C0661	3
	C15	CAPACITOR, MICA: 100 pF 5%, 500 V	72136	DM15FD101JO	C0874	2
	C16	CAPACITOR, MICA: 22 pF 5%, 500 V	72136	DM15ED220JO	C0378	1
	C17	CAPACITOR, EL AX: 1000 µF +75-10%, 25 V	56289	TE1211	C0832	4
	C18	CAPACITOR, MICA: 100 pF 5%, 500 V	72136	DM15FD101JO	C0874	2
	C19	CAPACITOR, DISC, CERAMIC: .01 µF +80-20%, 100 V	91418	TA110	C0556	4
	C20	CAPACITOR, MICA: 150 pF 5%, 500 V	72136	DM15FD151JO	C1076	1
	C21	CAPACITOR, TANT: 47 µF 10%, 20 V	56289	150D476X9020R2	C0924	1
	C22	CAPACITOR, DISC, CERAMIC: .01 µF +80-20%, 100 V	91418	TA110	C0556	4
	C23	CAPACITOR, DISC, CERAMIC: .05 µF +80-20%, 10 V	71590	UK10-503	C0672	4
	C24	CAPACITOR, DISC, CERAMIC: .05 µF +80-20%, 10 V	71590	UK10-503	C0672	4
	C25	CAPACITOR, TANT: 39 µF 10%, 10 V	56289	150D396X9010B2	C0902	2
	C26	CAPACITOR, TANT: 10 µF 10%, 20 V	56289	150D106X9020B2	C0353	2
	C27	CAPACITOR, TANT: 10 µF 10%, 20 V	56289	150D106X9020B2	C0353	2
	C28	CAPACITOR, MICA: 27 µF 5%, 500 V	72136	DM15ED270JO	C0530	1
	C29	CAPACITOR, DISC, CERAMIC: .05 µF +80-20%, 10 V	71590	UK10-503	C0672	4
	C30	CAPACITOR, DISC, CERAMIC: .05 µF +80-20%, 10 V	71590	UK10-503	C0672	4
	C31	CAPACITOR, TANT: 1 µF 10%, 35 V	56289	150D105X9035A2	C0524	3
	C32	CAPACITOR, DISC, CERAMIC: 1. µF 20%, 25 V	56289	5C023105X0250B3	V0879	3
	C33	CAPACITOR, TANT: 1 µF 10%, 35 V	56289	150D105X9035A2	C0524	3
	CR1	DIODE, RECT: 1N4005	04713	1N4005	CR0284	12
	CR2	DIODE, RECT: 1N4005	04713	1N4005	CR0284	12

EQUIPMENT/ASSEMBLY DESIGNATION: A2, Amplifier-Power Supply Assembly #045601-4-1 (Cont'd)

(1) DESIGNATOR ITEM	(1) DESIGNATOR REF	(2) COMPONENT NOMENCLATURE AND DESCRIPTION	(3) MFR'S CODE	(4) MANUFACTURER'S PART NUMBER	(5) SC STOCK NO.	(6) T/Q
	CR3	DIODE, RECT: 1N4005	04713	1N4005	CR0284	12
	CR4	DIODE, RECT: 1N4005	04713	1N4005	CR0284	12
	CR5	DIODE, RECT: 1N4005	04713	1N4005	CR0284	12
	CR6	DIODE, RECT: 1N4005	04713	1N4005	CR0284	12
	CR7	DIODE, RECT: 1N4005	04713	1N4005	CR0284	12
	CR8	DIODE, RECT: 1N4005	04713	1N4005	CR0284	12
	CR9	DIODE, RECT: 1N4005	04713	1N4005	CR0284	12
	CR10	DIODE, RECT: 1N4005	04713	1N4005	CR0284	12
	CR11	DIODE, RECT: 1N4005	04713	1N4005	CR0284	12
	CR12	DIODE, RECT: 1N4005	04713	1N4005	CR0284	12
	CR13	DIODE, SIGNAL: 1N4829	03508	1N4829	CR0364	1
	CR14	DIODE, SIGNAL: 1N4151	03508	1N4151	CR0150	1
	CR15	DIODE, SIGNAL: 40 V 80 mA	52542	006700	006700	1
	CR16	DIODE, SIGNAL: 70 V 100 ps	28480	5082-2800	CR0363	2
	CR17	DIODE, SIGNAL: 70 V 100 ps	28480	5082-2800	CR0363	2
	L1	INDUCTOR, FIXED: 100 µH 10%, 43 QMIN	72259	WEE-WEE-100	L0156	1
	Q1	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, NPN	04713	MPS-A42	Q0320	1
	Q2	SEMICONDUCTOR DEVICE, TRANSISTOR: JFET, N-channel	04713	2N4091	Q0304	1
	Q3	SEMICONDUCTOR DEVICE, TRANSISTOR: Dual gate, N-channel, MOSFET	04713	MFE121	Q0311	1
	Q4	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, NPN	07263	2N3646	Q0218	3
	Q5	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, NPN	07263	2N3646	Q0218	3
	Q6	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, NPN	07263	2N3646	Q0218	3
	Q7	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, PNP	04713	2N3906	Q0248	1
	Q8	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, NPN	04713	2N3904	Q0247	1
	R1	RESISTOR, COMP: 100 k 5%, 1/4 W	01121	CB1045	R0741	5
	R2	RESISTOR, COMP: 330 k 5%, 1/4 W	01121	CB3345	R1203	1
	R3	RESISTOR, POTENTIOMETER, CERAMIC: 100 k 20%, 1/2 W, 4-turn, P.C. top adjust	80294	3339H-1-104	R2945	1
	R4	RESISTOR, COMP: 1 M 5%, 1/4 W	01121	CB1055	R0962	2
	R5	RESISTOR, COMP: 1 M 5%, 1/4 W	01121	CB1055	R0962	2
	R6	RESISTOR, COMP: 270 Ω 5%, 1/4 W	01121	CB2715	R0694	1
	R7	RESISTOR, COMP: 1 k 5%, 1/4 W	01121	CB1025	R0765	2
	R8	RESISTOR, COMP: 200 Ω 5%, 1/4 W	01121	CB2015	R0736	1
	R9	RESISTOR, COMP: 100 k 5%, 1/4 W	01121	CB1045	R0741	5
	R10	RESISTOR, COMP: 33 k 5%, 1/4 W	01121	CB3335	R0780	1
	R11	RESISTOR, COMP: 13 k 5%, 1/4 W	01121	CB1335	R0882	1
	R12	RESISTOR, COMP: 100 k 5%, 1/4 W	01121	CB1045	R0741	5
	R13	RESISTOR, COMP: 11 k 5%, 1/4 W	01121	CB1135	R1582	1
	R14	RESISTOR, COMP: 620 Ω 5%, 1/4 W	01121	CB6215	R1334	1
	R15	RESISTOR, COMP: 100 k 5%, 1/4 W	01121	CB1045	R0741	5
	R16	RESISTOR, COMP: 510 Ω 5%, 1/4 W	01121	CB5115	R0984	2
	R17	RESISTOR, COMP: 6.8 k 5%, 1/4 W	01121	CB6825	R0696	1
	R18	RESISTOR, COMP: 2.2 k 5%, 1/4 W	01121	CB2225	R0749	1
	R19	RESISTOR, COMP: 3.0 k 5%, 1/4 W	01121	CB3025	R0711	4

EQUIPMENT/ASSEMBLY DESIGNATION A2, Amplifier-Power Supply Assembly #045601-4-1 (Cont'd)

(1) DESIGNATOR ITEM	(1) DESIGNATOR REF	(2) COMPONENT NOMENCLATURE AND DESCRIPTION	(3) MFR'S CODE	(4) MANUFACTURER'S PART NUMBER	(5) SD STOCK NO.	(6) T/Q
	R20	RESISTOR, COMP: 3.0 k 5%, 1/4 W	01121	CB3025	R0711	4
	R21	RESISTOR, COMP: 12 k 5%, 1/4 W	01121	CB1235	R0759	1
	R22	RESISTOR, COMP: 680 Ω 5%, 1/4 W	01121	CB6815	R1234	1
	R23	RESISTOR, POTENTIOMETER, CERAMIC: 20 k 20%, 1/2 W, 4-turn, P.C. top adjust	80294	3339H-1-203	R2946	1
	R24	RESISTOR, COMP: 470 Ω 5%, 1/4 W	01121	CB4715	R1044	1
	R25	RESISTOR, COMP: 1.8 k 5%, 1/4 W	01121	CB1825	R0959	1
	R26	RESISTOR, COMP: 2.7 k 5%, 1/4 W	01121	CB2725	R0937	1
	R27	RESISTOR, COMP: 330 Ω 5%, 1/4 W	01121	CB3315	R0662	1
	R28	RESISTOR, COMP: 3.0 k 5%, 1/4 W	01121	CB3025	R0711	4
	R29	RESISTOR, COMP: 3.0 k 5%, 1/4 W	01121	CB3025	R0711	4
	R30	RESISTOR, COMP: 2.0 k 5%, 1/4 W	01121	CB2025	R0734	1
	R31	RESISTOR, COMP: 3.6 k 5%, 1/4 W	01121	CB3625	R0938	1
	R32	RESISTOR, COMP: 9.1 k 5%, 1/4 W	01121	CB9125	R0776	1
	R33	RESISTOR, COMP: 510 Ω 5%, 1/4 W	01121	CB5115	R0984	2
	R34	RESISTOR, COMP: 10 k 5%, 1/4 W	01121	CB1035	R0766	1
	R35	RESISTOR, Metal Film: 1.00 M 1%, .12 W	19701	MF5C-D-1004F	R2371	1
	R36	RESISTOR, Metal Film: 100 k 1%, .12 W	91637	MFF 1/8 T1	R2638	1
	R37	RESISTOR, COMP: 130 k 5%, 1/4 W	01121	CB1345	R0960	1
	R38	RESISTOR, COMP: 8.2 k 5%, 1/4 W	01121	CB8225	R0883	1
	R39	RESISTOR, COMP: 47 k 5%, 1/4 W	01121	CB4735	R0777	1
	R40	RESISTOR, COMP: 43 k 5%, 1/4 W	01121	CB4335	R0695	1
	R41	RESISTOR, Metal Film: 402 k 1%, .12 W	19701	MF5C-D-4023-F	R2798	2
	R42	RESISTOR, Metal Film: 402 k 1%, .12 W	19701	MF5C-D-4023-F	R2798	2
	R43	RESISTOR, COMP: 100 k 5%, 1/4 W	01121	CB1045	R0741	5
	R44	RESISTOR, COMP: 5.6 k 5%, 1/4 W	01121	CB5625	R0821	1
	U1	INTEGRATED CIRCUIT: LM723C, 2-37 V	27014	LM723CN	025761	1
	U2	INTEGRATED CIRCUIT: LM301A, A88DB	27014	LM201AH	025745	1
	U3	INTEGRATED CIRCUIT: Quad 2-input NAND gates, TTL	01295	SN7400N	019705	1
	VR1	DIODE, ZENER: 180 V 5%, .4 W	04713	1N991B	CR0395	1
	VR2	DIODE, ZENER: 1.5 V 10%, .1 W	13715	FZ902	26015850	1
		TERMINAL	68245	20008	E0100	4

EQUIPMENT/ASSEMBLY DESIGNATION: A3, Readout Assembly, 5 Digit #045586-4-3

(1) DESIGNATOR ITEM	(1) DESIGNATOR REF	(2) COMPONENT NOMENCLATURE AND DESCRIPTION	(3) MFR'S CODE	(4) MANUFACTURER'S PART NUMBER	(5) SD STOCK NO.	(6) T/Q
		SCHEMATIC, READOUT ASSEMBLY	52542	045586-7-3	045586-7-3	REF
	CR1	DIODE, LED: .12D, 20 mA, .6 in. P.C.	28480	HPA 5082-4480	CR0394	3
	CR2	DIODE, LED: .12D, 20 mA, .6 in. P.C.	28480	HPA 5082-4480	CR0394	3
	CR3	DIODE, LED: .12D, 20 mA, .6 in. P.C.	28480	HPA 5082-4480	CR0394	3
	Q1	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, NPN	04713	MPS-A42	Q0320	5
	Q2	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, PNP	07263	PN4889-18	Q0321	5
	Q3	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, NPN	04713	MPS-A42	Q0320	5
	Q4	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, PNP	07263	PN4889-18	Q0321	5
	Q5	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, NPN	04713	MPS-A42	Q0320	5
	Q6	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, PNP	07263	PN4889-18	Q0321	5
	Q7	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, NPN	04713	MPS-A42	Q0320	5
	Q8	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, PNP	07263	PN4889-18	Q0321	5
	Q9	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, NPN	04713	MPS-A42	Q0320	5
	Q10	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, PNP	07263	PN4889-18	Q0321	5
	Q11	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, NPN	04713	MPS-A42	Q0320	5
	Q12	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, PNP	07263	PN4889-18	Q0321	5
	R1	RESISTOR, COMP: 1 k 5%, 1/4 W	01121	CB1025	R0765	2
	R2	RESISTOR, COMP: 1 k 5%, 1/4 W	01121	CB1025	R0765	2
	R3	RESISTOR, COMP: 2.2 k 5%, 1/4 W	01121	CB2225	R0749	5
	R4	RESISTOR, COMP: 390 k 5%, 1/4 W	01121	CB3945	R1700	5
	R5	RESISTOR, COMP: 4.7 k 5%, 1/4 W	01121	CB4725	R0892	6
	R6	RESISTOR, COMP: 2.2 k 5%, 1/4 W	01121	CB2225	R0749	5
	R7	RESISTOR, COMP: 390 k 5%, 1/4 W	01121	CB3945	R1700	5
	R8	RESISTOR, COMP: 4.7 k 5%, 1/4 W	01121	CB4725	R0892	6
	R9	RESISTOR, COMP: 2.2 k 5%, 1/4 W	01121	CB2225	R0749	5
	R10	RESISTOR, COMP: 390 k 5%, 1/4 W	01121	CB3945	R1700	5
	R11	RESISTOR, COMP: 4.7 k 5%, 1/4 W	01121	CB4725	R0892	6
	R12	RESISTOR, COMP: 2.2 k 5%, 1/4 W	01121	CB2225	R0749	5
	R13	RESISTOR, COMP: 390 k 5%, 1/4 W	01121	CB3945	R1700	5
	R14	RESISTOR, COMP: 4.7 k 5%, 1/4 W	01121	CB4725	R0892	6
	R15	RESISTOR, COMP: 2.2 k 5%, 1/4 W	01121	CB2225	R0749	5
	R16	RESISTOR, COMP: 390 k 5%, 1/4 W	01121	CB3945	R1700	5
	R17	RESISTOR, COMP: 4.7 k 5%, 1/4 W	01121	CB4725	R0892	6
	R18	RESISTOR, COMP: 560 k 5%, 1/4 W	01121	CB5645	R1321	2
	R19	RESISTOR, COMP: 1 M 5%, 1/4 W	01121	CB1055	R0962	2
	R20	RESISTOR, COMP: 560 k 5%, 1/4 W	01121	CB5645	R1321	2
	R21	RESISTOR, COMP: 1 M 5%, 1/4 W	01121	CB1055	R0962	2
	R22	RESISTOR, COMP: 4.7 k 5%, 1/4 W	01121	CB4725	R0892	6
	R23	RESISTOR, COMP: 270 Ω 5%, 1/4 W	01121	CB2715	R0694	3
	R24	RESISTOR, COMP: 270 Ω 5%, 1/4 W	01121	CB2715	R0694	3
	R25	RESISTOR, COMP: 270 Ω 5%, 1/4 W	01121	CB2715	R0694	3

EQUIPMENT/ASSEMBLY DESIGNATION: A3, Readout Assembly, 5 Digit #045586-4-3 (Cont'd)

(1) DESIGNATOR ITEM	(1) DESIGNATOR REF	(2) COMPONENT NOMENCLATURE AND DESCRIPTION	(3) MFR'S CODE	(4) MANUFACTURER'S PART NUMBER	(5) SD STOCK NO.	(6) T/Q
	R26	RESISTOR, COMP: 330 k 5%, 1/4 W	01121	CB3345	R1203	4
	R27	RESISTOR, COMP: 330 k 5%, 1/4 W	01121	CB3345	R1203	4
	R28	RESISTOR, COMP: 330 k 5%, 1/4 W	01121	CB3345	R1203	4
	R29	RESISTOR, COMP: 330 k 5%, 1/4 W	01121	CB3345	R1203	4
	R44	RESISTOR, COMP: 330 k 5%, 1/4 W	01121	CB3345	R1203	4
	R45	RESISTOR, COMP: 330 k 5%, 1/4 W	01121	CB3345	R1203	4
	R46	RESISTOR, COMP: 330 k 5%, 1/4 W	01121	CB3345	R1203	4
	R47	RESISTOR, COMP: 330 k 5%, 1/4 W	01121	CB3345	R1203	4
	U1	INTEGRATED CIRCUIT: Decoder Driver, TTL	01295	SN7414N	025730	1
	U2	INTEGRATED CIRCUIT: Dec/Driver Segment, TTL	52542	DD700	045203	1
	V1	DISPLAY: 3 Digit	52542	SP-33	V0138	1
	V2	DISPLAY: 2 Digit	52542	SP-332	V0137	1
	XV1	SOCKET, DISPLAY: 3 Digit	52542	CS-333	X0197	1
	XV2	SOCKET, DISPLAY: 2 Digit	52542	CS-332	X0198	1
		SPACER: 4 3/16 X 3/16	06540	9208N-115	H2056	3

EQUIPMENT/ASSEMBLY DESIGNATION A4, Oscillator P.C. Assembly #045604-4-1

(1) DESIGNATOR ITEM	(1) DESIGNATOR REF	(2) COMPONENT NOMENCLATURE AND DESCRIPTION	(3) MFR'S CODE	(4) MANUFACTURER'S PART NUMBER	(5) SD STOCK NO.	(6) T/Q
		SPECIFICATIONS: P.C. BOARD	52542	045604-1-1	045604-1-1	1
	C1,2	CAPACITOR, DISC, CERAMIC: .01 µF +80-20%, 100 V	91418	TA110	C0556	2
	C3	CAPACITOR, DISC, CERAMIC: .1 µF +80-20%, 10 V	71590	UK10=104	C0661	1
	C4	CAPACITOR, MICA: 10 pF 5%, 500 V	72136	DM15CD100JO	C0527	1
	C5,9	CAPACITOR, MICA: 33 pF 5%, 500 V	72136	DM15ED330JO	C0531	2
	C6	CAPACITOR, MICA: 100 pF 5%, 500 V	72136	DM15FD101JO	C0536	1
	C7	CAPACITOR, MICA: 220 pF 5%, 500 V	72136	DM15FD221JO	C0538	1
	C8	CAPACITOR, MICA: 150 pF 5%, 500 V	72136	DM15FD151JO	C0537	1
	C10	CAPACITOR, VARCER: 9.0-35 pF	72982	538-006D9.0-35	C0792	1
	CR1	DIODE, SIGNAL: 50 V	03508	1N4151	CR0150	1
	Q1-3	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, NPN	07263	2N4275	26013140	3
	Q4	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, PNP	07263	2N4258	26004011	1
	R1,4	RESISTOR, COMP: 470 Ω 5%, 1/4 W	01121	CB4715	R1044	2
	R2,6	RESISTOR, COMP: 1 k 5%, 1/4 W	01121	CB1025	R0765	2
	R3,8	RESISTOR, COMP: 4.7 k 5%, 1/4 W	01121	CB4725	R0892	2
	R5	RESISTOR, COMP: 3.3 k 5%, 1/4 W	01121	CB3325	R0742	1
	R7	RESISTOR, COMP: 10 k 5%, 1/4 W	01121	CB1035	R0766	1
	R9	RESISTOR, COMP: 47 k 5%, 1/4 W	01121	CB4735	R0777	1
	R10	RESISTOR, COMP: 100 k 5%, 1/4 W	01121	CB1045	R0741	1
	U1	INTEGRATED CIRCUIT: Quad 2-input NAND gates, DTL	01295	SN15846N	019716	1
	U2	INTEGRATED CIRCUIT: Decade Counter, TTL	01295	SN7490N	025732	1
	Y1	CRYSTAL	52542	039483	039483	1

4.4 PARTS LISTS

EQUIPMENT/ASSEMBLY DESIGNATION: OPT 06, Battery Pack Assembly #045629-4-1

(1) DESIGNATOR ITEM	(1) DESIGNATOR REF	(2) COMPONENT NOMENCLATURE AND DESCRIPTION	(3) MFR'S CODE	(4) MANUFACTURER'S PART NUMBER	(5) SD STOCK NO.	(6) T/Q
1		ASSEMBLY, ENCLOSURE	52542	045635-4-1	045635-4-1	1
2		ASSEMBLY, TEST, BATTERY PACK	52542	045630-4-1	045630-4-1	1
3		SCREW, PAN HEAD MACHINE: 6-32 X 1/4	MIL	MS51957-26	H0986	4
4		WASHER, #6, split-lock	MIL	MS35338-136	H0783	4
5		MODEL 6220 W/OPT 07	52542	045620-4-1	045620-4-1	REF
6		MODEL 6202 W/OPT 07	52542	045602-4-1	045602-4-1	REF

4.4 PARTS LISTS

EQUIPMENT/ASSEMBLY DESIGNATION: OPT 06, Enclosure Assembly #045635-4-1

(1) DESIGNATOR ITEM	(1) DESIGNATOR REF	(2) COMPONENT NOMENCLATURE AND DESCRIPTION	(3) MFR'S CODE	(4) MANUFACTURER'S PART NUMBER	(5) SD STOCK NO.	(6) T/Q
1		ASSEMBLY, ENCLOSURE, RIVET-PIN	52542	045635-3-1	045635-3-1	1
2		FOOT, NYLON	21604	PP40013	H2057	4
3		ASSEMBLY, HANDLE	12136	1875-376-370	H1795	1
4		SCREW, PAN HEAD MACHINE: 6-32 X 5/8	MIL	MS51957-31	H0966	4
5		SCREW, PAN HEAD MACHINE: 4-40 X 3/8	MIL	MS51957-15	H0376	2
6		NUT, KEP: 6-32	78189	511-061800-00	H1736	4
7		NUT, KEP: 4-40	78189	511-041800-00	H1872	2
8		WASHER, #6 flat	MIL	MS15795-805	H0759	4
9		PLATE, BASE		045637-1-1	045637-1-1	1

4.4 PARTS LISTS

EQUIPMENT/ASSEMBLY DESIGNATION: OPT 06, Battery Pack Test Assembly #045630-4-1

(1) DESIGNATOR ITEM	(1) DESIGNATOR REF	(2) COMPONENT NOMENCLATURE AND DESCRIPTION	(3) MFR'S CODE	(4) MANUFACTURER'S PART NUMBER	(5) SO STOCK NO.	(6) T/Q
1		PANEL, FRONT	52542	045632-1-1	045632-1-1	1
2		PANEL, DECORATIVE	52542	045638-1-1	045638-1-1	1
3		FRAME, BATTERY PACK	52542	045631-1-1	045631-1-1	1
4		COVER	52542	045633-4-1	045633-4-1	2
5	T1	TRANSFORMER, POWER	52542	045551-6-1	045551-6-1	1
6	A1	ASSEMBLY, P.C. BOARD	52542	045634-4-1	045634-4-1	1
7	J1	CONNECTOR, POWER	82389	EAC-301	J0664	1
8	J2	CONNECTOR, JACK, BLACK	74970	108-1103-001	J0652	1
9	J3	CONNECTOR, JACK, RED	74970	108-1102-001	J0651	1
10	XF1	FUSE, BLOCK	75915	357001	X0194	1
11	F1	FUSE, 3AGMB, 250 V	75915	312.500	F0044	1
12	S1	SWITCH, SLIDE	82389	50212L	S0438	1
13	TB1,2	STRIP, TERMINAL 3 LUG, 2 HOLE	52542	H2073	H0273	2
14	TB3,4	STRIP, TERMINAL 4-40, SCREW	92825	3A1-A1	E0098	2
15		CLAMP	52542	E0018	E0018	1
17		SPACER, 6 1/2 X 1/4	83330	2102	H1616	4
18	BT1,2	BATTERY, 6 V	25244	GC645-1	BT0005	2
19	R7	RESISTOR, 10 Ω 5%, 10 W	56289	247E1005	R2880	1
20	Q3	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, NPN	04713	2N5190	Q0281	1
21		INSULATOR, UG1094/U TYPE, NYLON	07047	10221N	H1574	2
22		SPACER, RIGHT ANGLE: 6-32	88245	1590 B	E0117	4
23		SCREW, PAN HEAD MACHINE: 4-40 X 1/4	MIL	MS51957-13	H0440	8
24		SCREW, PAN HEAD MACHINE: 4-40 X 5/16	MIL	MS51957-14	H1273	4
25		SCREW, PAN HEAD MACHINE: 6-32 X 5/16	MIL	MS51957-27	H1281	4
26		SCREW, PAN HEAD MACHINE: 6-32 X 3/8	MIL	MS51957-28	H0989	8
27		SCREW, PAN HEAD MACHINE: 6-32 X 1 3/4	MIL	MS51957-37	H1391	4
28		NUT, HEX: 4-40		NAS671C4	H0249	10
29		NUT, HEX: 6-32		NAS671C6	H0380	4
30		FOAM: 1/2 X 1/2 X 3	76381	4304	H1462	2
31		WASHER, MYLAR	86928	5622-9-7	H1838	4
32		WASHER, #6, flat	MIL	MS15795-805	H0759	4
33		WASHER: #4, split-lock	MIL	MS35338-135	H0782	13
34		WASHER: #6, split-lock	MIL	MS35338-136	H0783	12
		PLUG, BLACK	74970	108-1003-001	J0655	2
		PLUG, RED	74970	108-1002-001	J0654	2
		CORD, LINE	70903	BR-1736	W0095	1
		WIRE, TERMINAL	00779	60611-1	H2042	4

4.4 PARTS LISTS

EQUIPMENT/ASSEMBLY DESIGNATION: OPT 06, A1, Battery Pack Assembly #045634-4-1

(1) DESIGNATOR ITEM	(1) DESIGNATOR REF	(2) COMPONENT NOMENCLATURE AND DESCRIPTION	(3) MFR'S CODE	(4) MANUFACTURER'S PART NUMBER	(5) SD STOCK NO.	(6) T/Q
		P.C. BOARD, SPEC.	52542	045634-1-1	045634-1-1	1
	CR1	DIODE, 600 V	04713	1N4005	CR0284	5
	CR2	DIODE, 600 V	04713	1N4005	CR0284	5
	CR3	DIODE, 600 V	04713	1N4005	CR0284	5
	CR4	DIODE, 600 V	04713	1N4005	CR0284	5
	CR5	DIODE, 600 V	04713	1N4005	CR0284	5
	Q1	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, NPN	07263	2N3643	Q0179	2
	Q2	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, NPN	07263	2N3643	Q0179	2
	R1	RESISTOR, COMP: 1 k 5%, 1/4 W	01121	CB1025	R0765	1
	R2	RESISTOR, COMP: 180 Ω 5%, 1/4 W	01121	CB1815	R1233	2
	R3	RESISTOR, COMP: 180 Ω 5%, 1/4 W	01121	CB1815	R1233	2
	R4	RESISTOR, COMP: 390 Ω 5%, 1/4 W	01121	CB3915	R0880	1
	R5	RESISTOR, COMP: 560 Ω 5%, 1/4 W	01121	CB5615	R0819	1
	R6	RESISTOR,POTENTIOMETER, CERAMIC: 5 k 10%, 1/2 W, 1-turn, P.C. side adjust	73138	62PAR5K	R2076	1
	VR1	DIODE, ZENER: 4.3 V 10%, .4 W	03877	1N749	CR0306	1
		SPACER, SWAGE: 4-40	83330	4200	100003	2

4.4 PARTS LISTS

EQUIPMENT/ASSEMBLY DESIGNATION: OPT 07, Power Inverter Assembly #045796-4-1

(1) DESIGNATOR ITEM	(1) DESIGNATOR REF	(2) COMPONENT NOMENCLATURE AND DESCRIPTION	(3) MFR'S CODE	(4) MANUFACTURER'S PART NUMBER	(5) SD STOCK NO.	(6) T/Q
5	A5	ASSEMBLY, P.C. POWER INVERTER	52542	045625-4-1	045625-4-1	1
8	J4	CONNECTOR, JACK: RED	74970	108-1102-001	J0651	1
9	J5	CONNECTOR, JACK: BLACK	74970	108-1103-001	J0652	1
11	Q1	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, PNP	04713	2N5193	Q0300	2
12	Q3	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, PNP	04713	2N5193	Q0300	2
17		SCREW, PAN HEAD MACHINE: 6-32 X 3/8	MIL	MS51957-28	H0989	3
18		SCREW, PAN HEAD MACHINE: 4-40 X 5/16	MIL	MS51957-14	H1273	2
20		WASHER, #6, split-lock	MIL	MS35338-136	H0783	3

4.4 PARTS LISTS

EQUIPMENT/ASSEMBLY DESIGNATION: OPT 07, A5, Power Inverter Assembly #045625-4-1

(1) DESIGNATOR ITEM	(1) DESIGNATOR REF	(2) COMPONENT NOMENCLATURE AND DESCRIPTION	(3) MFR'S CODE	(4) MANUFACTURER'S PART NUMBER	(5) SD STOCK NO.	(6) T/Q
	C1	CAPACITOR: 56 µF 10%, 16 V	56289	150D566X9006B2	C1090	3
	C2	CAPACITOR: 56 µF 10%, 16 V	56289	150D566X9006B2	C1090	3
	C3	CAPACITOR: 56 µF 10%, 16 V	56289	150D566X9006B2	C1090	3
	CR1	DIODE, SIGNAL: 50 V	03508	1N4151	CR0150	2
	CR2	DIODE, SIGNAL: 50 V	03508	1N4151	CR0150	2
	CR3	DIODE, RECT: 150 V	04713	1N4005	CR0284	1
	Q1	NEXT ASSEMBLY				
	Q2	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, NPN	07263	2N3646	Q0218	2
	Q3	NEXT ASSEMBLY				
	Q4	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, NPN	07263	2N3646	Q0218	2
	R1	RESISTOR, COMP: 10 k 5%, 1/4 W	01121	CB1035	R0766	4
	R2	RESISTOR, COMP: 47 Ω 5%, 1/4 W	01121	CB4705	R0743	2
	R3	RESISTOR, COMP: 10 k 5%, 1/4 W	01121	CB1035	R0766	4
	R5	RESISTOR, COMP: 910 k 5%, 1/4 W	01121	CB9145	R2312	4
	R6	RESISTOR, COMP: 270 k 5%, 1/4 W	01121	CB2745	R1622	2
	R7	RESISTOR, POTENTIOMETER, CERAMIC: 100 k 20%, 1/2 W, 4-turn, P.C. top adjust	80294	3339H-1-104	R2945	2
	R8	RESISTOR, COMP: 3.9 k 5%, 1/4 W	01121	CB3925	R0939	2
	R9	RESISTOR, COMP: 10 k 5%, 1/4 W	01121	CB1035	R0766	4
	R10	RESISTOR, COMP: 47 Ω 5%, 1/4 W	01121	CB4705	R0743	2
	R11	RESISTOR, COMP: 10 k 5%, 1/4 W	01121	CB1035	R0766	4
	R12	RESISTOR, COMP: 910 k 5%, 1/4 W	01121	CB9145	R2312	4
	R13	RESISTOR, COMP: 910 k 5%, 1/4 W	01121	CB9145	R2312	4
	R14	RESISTOR, COMP: 270 k 5%, 1/4 W	01121	CB2745	R1622	2
	R15	RESISTOR, POTENTIOMETER, CERAMIC: 100 k 20%, 1/2 W, 4-turn, P.C. top adjust	80294	3339H-1-104	R2945	2
	R16	RESISTOR, COMP: 3.9 k 5%, 1/4 W	01121	CB3925	R0939	2
	U1	INTEGRATED CIRCUIT: LM3900	27014	LM3900N	045213	1
	U2	INVERTER	52542	045622-6-1	045622-6-1	1
	VR1	DIODE, ZENER: 3.3 V 5%, .4 W	03877	1N746A	CR0290	2
	VR2	DIODE, ZENER: 3.3 V 5%, .4 W	03877	1N746A	CR0290	2
		SPECIFICATIONS, P.C. BOARD	52542	045625-1-1	045625-1-1	1

4.4 PARTS LISTS

EQUIPMENT/ASSEMBLY DESIGNATION: OPT 08, TCXO Oscillator Assembly #045605-4-1

(1) DESIGNATOR ITEM	(1) DESIGNATOR REF	(2) COMPONENT NOMENCLATURE AND DESCRIPTION	(3) MFR'S CODE	(4) MANUFACTURER'S PART NUMBER	(5) SD STOCK NO.	(6) T/Q
	C1	CAPACITOR, DISC, CERAMIC: .01 µF, +80-20%, 100 V	91418	TA110	C0556	1
	C2	CAPACITOR, DISC, CERAMIC: .05 µF, +80-20%, 10 V	71590	UK10-503	C0672	1
	CR1	DIODE, SIGNAL: 50 V	03508	1N4151	CR0150	1
	Q1	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, NPN	07263	2N4275	26013140	1
	R1	RESISTOR, COMP: 470 Ω 5%, 1/4 W	01121	CB4715	R1044	1
	R2	RESISTOR, COMP: 1 k 5%, 1/4 W	01121	CB1025	R0765	1
	R3	RESISTOR, COMP: 4.7 k 5%, 1/4 W	01121	CB4725	R0892	1
	U1	INTEGRATED CIRCUIT: Quad 2-input NAND gates	01295	SN15846N	019716	1
	U2	INTEGRATED CIRCUIT: 7490 Decade Counter	01295	SN7490N	025732	1
	U3	OSCILLATOR: 10 MHz TCXO	01537	K1087A-1T1B	AY0009	1
		P.C. BOARD, TCXO OSCILLATOR	52542	045605-1-1	045605-1-1	1

4.4 PARTS LISTS

EQUIPMENT/ASSEMBLY DESIGNATION: OPT 16, ADD 2 DIGITS #045586-4-5

(1) DESIGNATOR ITEM	(1) DESIGNATOR REF	(2) COMPONENT NOMENCLATURE AND DESCRIPTION	(3) MFR'S CODE	(4) MANUFACTURER'S PART NUMBER	(5) SD STOCK NO.	(6) T/Q
		ADD				
		READOUT P.C. SCHEMATIC	52542	045586-7-3	045586-7-3	REF
		LOGIC P.C. ASSEMBLY	52542	045607-4-2	045607-4-2	
		LOGIC P.C. SCHEMATIC	52542	045607-7-1	045607-7-1	REF
	Q11	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, NPN	04713	MPS-A42	Q0320	2
	Q12	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, PNP	07263	PN4889-18	Q0321	2
	Q13	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, NPN	04713	MPS-A42	Q0320	2
	Q14	SEMICONDUCTOR DEVICE, TRANSISTOR: Silicon, PNP	07263	PN4889-18	Q0321	2
	R31	RESISTOR, COMP: 2.2 k 5%, 1/4 W	01121	CB2225	R0749	2
	R32	RESISTOR, COMP: 390 k 5%, 1/4 W	01121	CB3945	R1700	2
	R33	RESISTOR, COMP: 4.7 k 5%, 1/4 W	01121	CB4725	R0892	2
	R34	RESISTOR, COMP: 2.2 k 5%, 1/4 W	01121	CB2225	R0749	2
	R35	RESISTOR, COMP: 390 k 5%, 1/4 W	01121	CB3945	R1700	2
	R36	RESISTOR, COMP: 4.7 k 5%, 1/4 W	01121	CB4725	R0892	2
	R37	RESISTOR, COMP: 560 k 5%, 1/4 W	01121	CB5645	R1321	1
	R38	RESISTOR, COMP: 1 M 5%, 1/4 W	01121	CB1055	R0962	1
	R48	RESISTOR, COMP: 330 k 5%, 1/4 W	01121	CB3345	R1203	2
	R49	RESISTOR, COMP: 330 k 5%, 1/4 W	01121	CB3345	R1203	2
		DELETE				
	W1	JUMPER				
	W2	JUMPER				
		ADD				
	U6	INTEGRATED CIRCUIT: DEC/STORE Tri-State	27014	DM85L52N	045212	2
	U7	INTEGRARED CIRCUIT: DEC/STORE Tri-State	27014	DM85L52N	045212	2

4.4 PARTS LISTS

EQUIPMENT/ASSEMBLY DESIGNATION: OPT 31, REAR INPUT #053056

(1) DESIGNATOR ITEM	(1) DESIGNATOR REF	(2) COMPONENT NOMENCLATURE AND DESCRIPTION	(3) MFR'S CODE	(4) MANUFACTURER'S PART NUMBER	(5) SD STOCK NO.	(6) T/Q
		DELETE				
		BUTTON, SNAP	83330	652	H1667	1
		ADD				
11	J6	CONNECTOR: BNC	52542	UG-1094/U	J0165	1
12		LUG, SOLDER	83330	1497	E0137	1

4.4 PARTS LISTS

EQUIPMENT/ASSEMBLY DESIGNATION: OPT 35, BCD CONVERSION ASSEMBLY #045787-4-1

(1) DESIGNATOR ITEM	(1) DESIGNATOR REF	(2) COMPONENT NOMENCLATURE AND DESCRIPTION	(3) MFR'S CODE	(4) MANUFACTURER'S PART NUMBER	(5) SD STOCK NO.	(6) T/Q
13	J1	CONNECTOR, P.C. EDGE	05574	2VH15/1AN5	J0504	1
14	P1	CONNECTOR, P.C. 50 PIN/W HOOD	02660	57-30500	J0171	1
8		CONNECTOR, BCD, PLASTIC MOLD	52542	045606-1-1	045606-1-1	2
						1
9		LABEL, NAMEPLATE	52542	037112	037112	1
		CONNECTOR, ASSEMBLY	52542	045787-9-1	045787-9-1	1
		ASSEMBLY, CABLE	52542	045787-9-2	045787-9-2	1
5		ASSEMBLY, BCD CONVERSION	52542	045603-4-1	045603-4-1	1
20		KEY, POLARIZED	05574	091-0024-000	H1369	1
21		CLAMP	06383	TMIS6	H1104	1
29		SCREW, PAN HEAD MACHINE: 4-40 X 7/8	MIL	MS51957-20	H1734	2
30		SCREW, FLAT HEAD MACHINE: 4-40 X 3/16	MIL	MS24693-C1	H1798	1
31		SCREW, PAN HEAD MACHINE: 2-56 X 7/16	MIL	MS51957-6	H0536	6
33		WASHER, #3 internal-tooth	73734	99401	H1151	2
34		WASHER, #2 split-lock	MIL	MS35337-77	H0481	6
35		WASHER, #4 internal-tooth	MIL	MS35333-70	H1282	1
36		WASHER, #4 split-lock	MIL	MS35338-135	H0782	2
37		WASHER, #4 flat	MIL	MS15795-803	H0758	2
38		NUT, #4-40	MIL	MS35649-244	H0763	1
39		NUT, #2-56	MIL	MS35649-224	H0377	6

4.4 PARTS LISTS

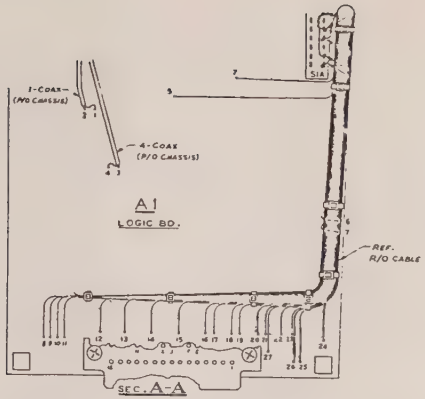
EQUIPMENT/ASSEMBLY DESIGNATION: OPT 35, BCD CONVERSION ASSEMBLY #045603-4-1

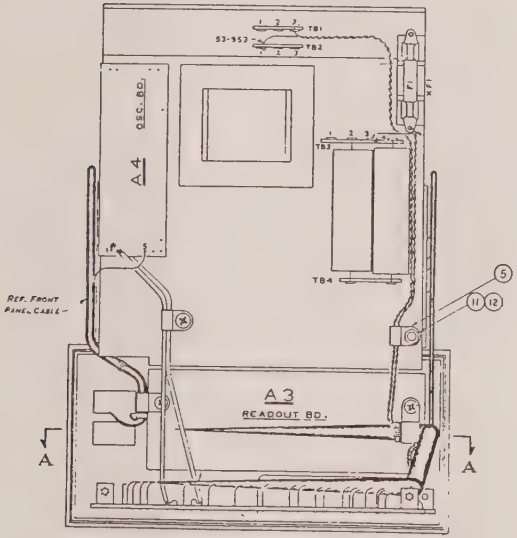
(1) DESIGNATOR ITEM	(1) DESIGNATOR REF	(2) COMPONENT NOMENCLATURE AND DESCRIPTION	(3) MFR'S CODE	(4) MANUFACTURER'S PART NUMBER	(5) SD STOCK NO.	(6) T/Q
		BOARD, P.C., BCD CONVERSION	52542	045603-1-1	045603-1-1	1
	Q1	SEMICONDUCTOR DEVICE, TRANSISTOR:	07263	2N4275	26013140	1
	R1	RESISTOR, COMP: 1 k 5%, 1/4 W	01121	CB1025	R0765	2
	R2	RESISTOR, COMP: 1 k 5%, 1/4 W	01121	CB1025	R0765	2
	R3	RESISTOR, COMP: 4.7 k 5%, 1/4 W	01121	CB4725	R0892	1
	U1	INTEGRATED CIRCUIT: Quad 2-input AND gates	04713	MC1806P	025733	1
	U2	INTEGRATED CIRCUIT: Quad 2-input NOR gates, DTL	04713	MC1810P	025735	2
	U3	INTEGRATED CIRCUIT: Quad 2-input NOR gates DTL	04713	MC1810P	025735	2
	U4	INTEGRATED CIRCUIT: Quad D REG TRI-STATE	27014	DM85L51N	045210	10
	U5	INTEGRATED CIRCUIT: Quad D REG TRI-STATE	27014	DM85L51N	045210	10
	U6	INTEGRATED CIRCUIT: Quad D REG TRI-STATE	27014	DM85L51N	045210	10
	U7	INTEGRATED CIRCUIT: Quad D REG TRI-STATE	27014	DM85L51N	045210	10
	U8	INTEGRATED CIRCUIT: Quad D REG TRI-STATE	27014	DM85L51N	045210	10
	U9	INTEGRATED CIRCUIT: Quad D REG TRI-STATE	27014	DM85L51N	045210	10
	U10	INTEGRATED CIRCUIT: Quad D REG TRI-STATE	27014	DM85L51N	045210	10
	U11	INTEGRATED CIRCUIT: Quad D REG TRI-STATE	27014	DM85L51N	045210	10
	U12	INTEGRATED CIRCUIT: Quad D REG TRI-STATE	27014	DM85L51N	045210	10
	U13	INTEGRATED CIRCUIT: Quad D REG TRI-STATE	27014	DM85L51N	045210	10

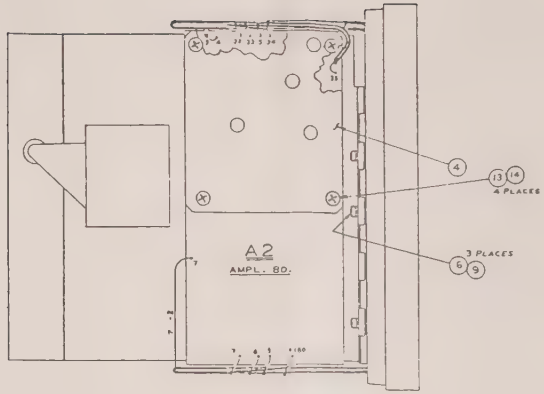
CHAPTER 5
DRAWINGS

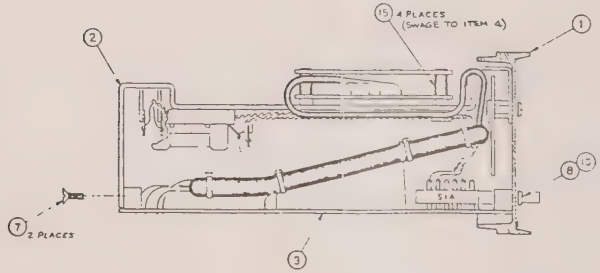
5.1 INTRODUCTION

Chapter 5 contains the assembly and schematic drawings for the Model 6202 Frequency Counter. The drawings are arranged with the overall assembly drawings first, the "A" numbered board assemblies and schematics, and the option drawings in order of option number in the back.

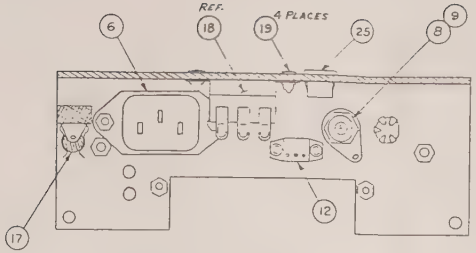




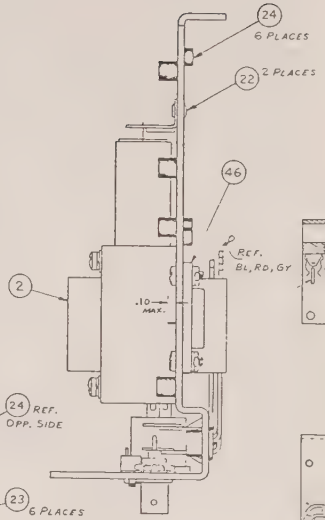




TEST ASSEMBLY #45642-4-1 REV A

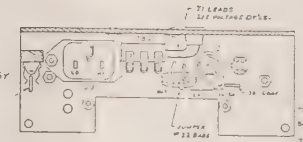


SECTION A-A



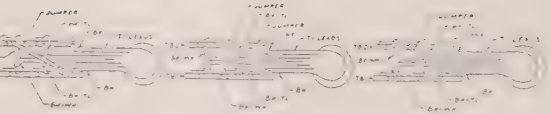
NOTE: IF ITEM 28 NOT SUPPLIED USE ITEM 53

NOTE: IF ITEM 38 NOT SUPPLIED USE ITEMS 46 THRU 52



SECTION A-A

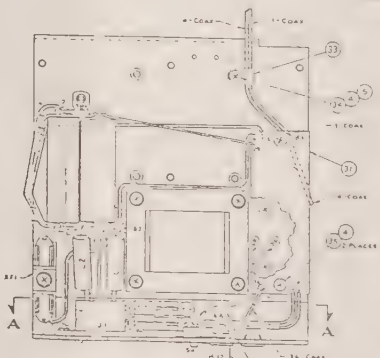
NOTE:
JUMPERS #22 GA. SOLID BARE W/TEFLON SLEEVE

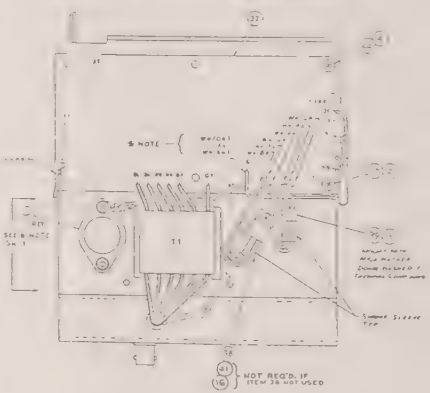


230V
TRANSFORMER HOOK-UP

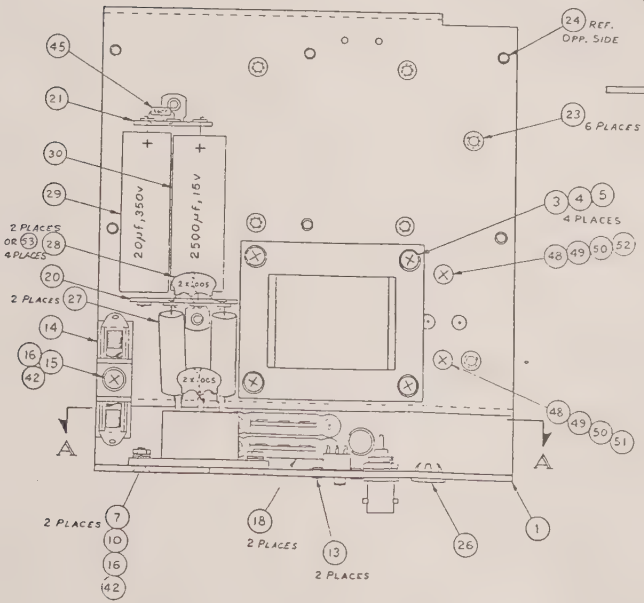
100V
TRANSFORMER HOOK-UP

200V
TRANSFORMER HOOK-UP

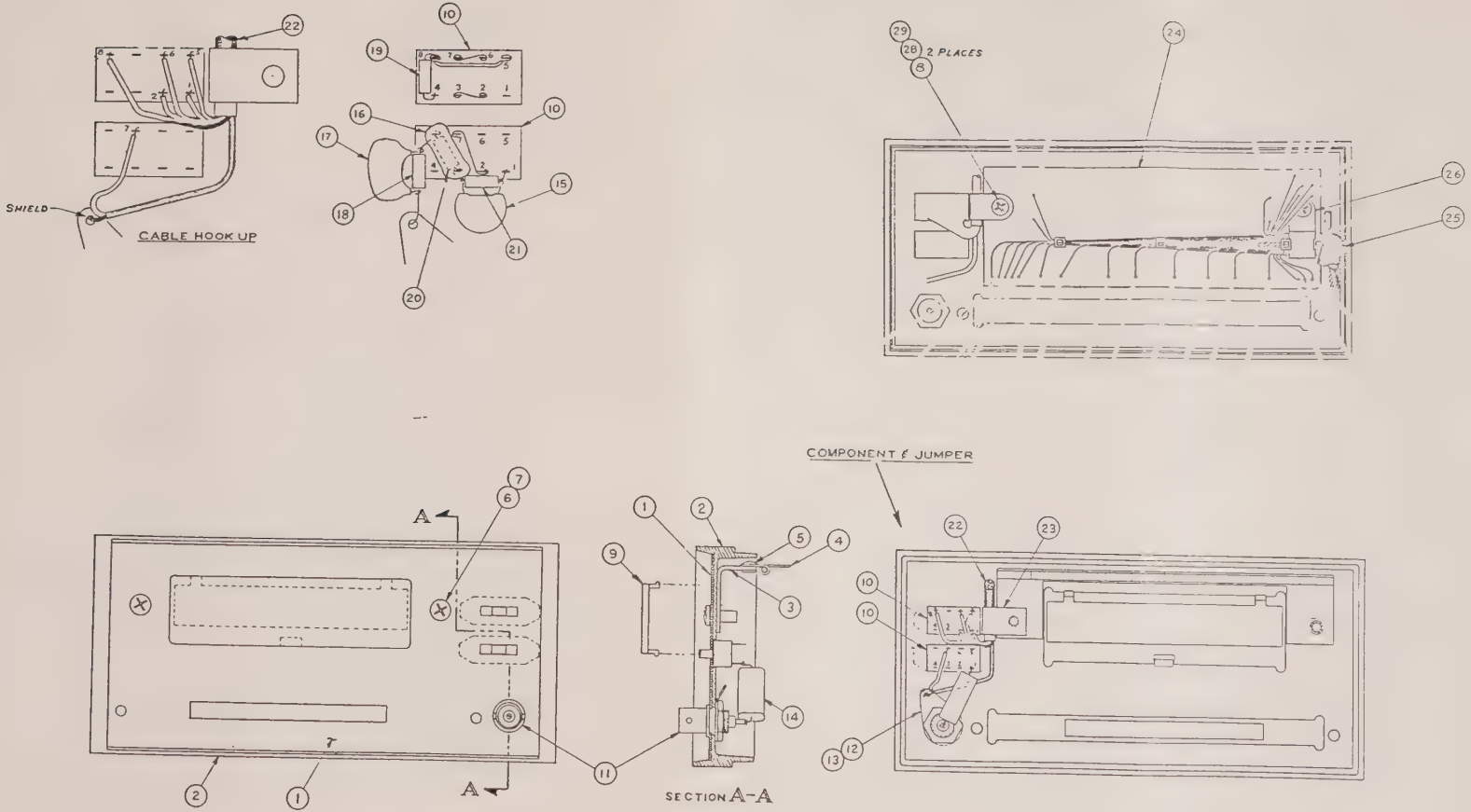




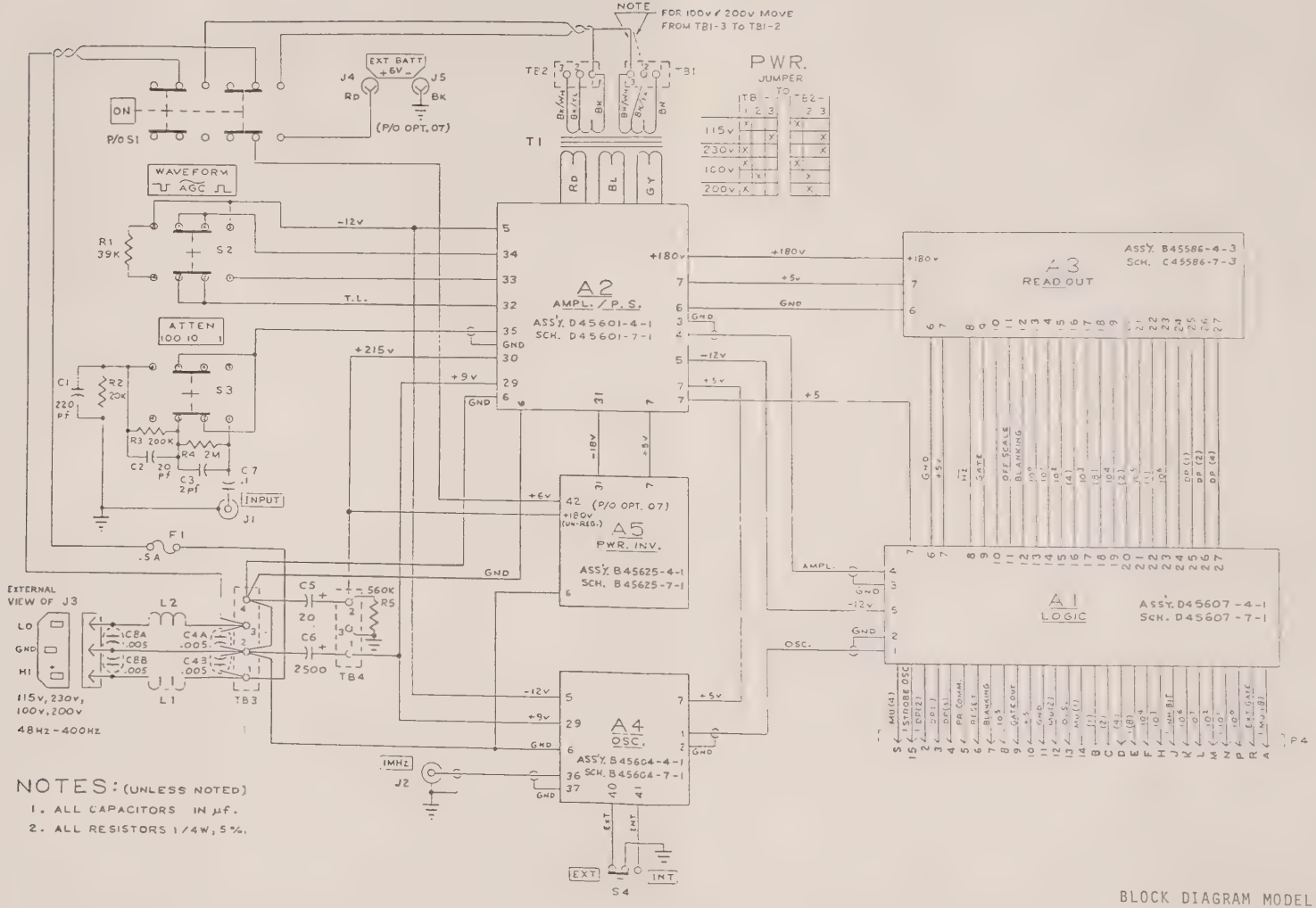
115V
TRANSFORMER HOOK UP



CHASSIS ASSEMBLY
#45594-5-1 REV C



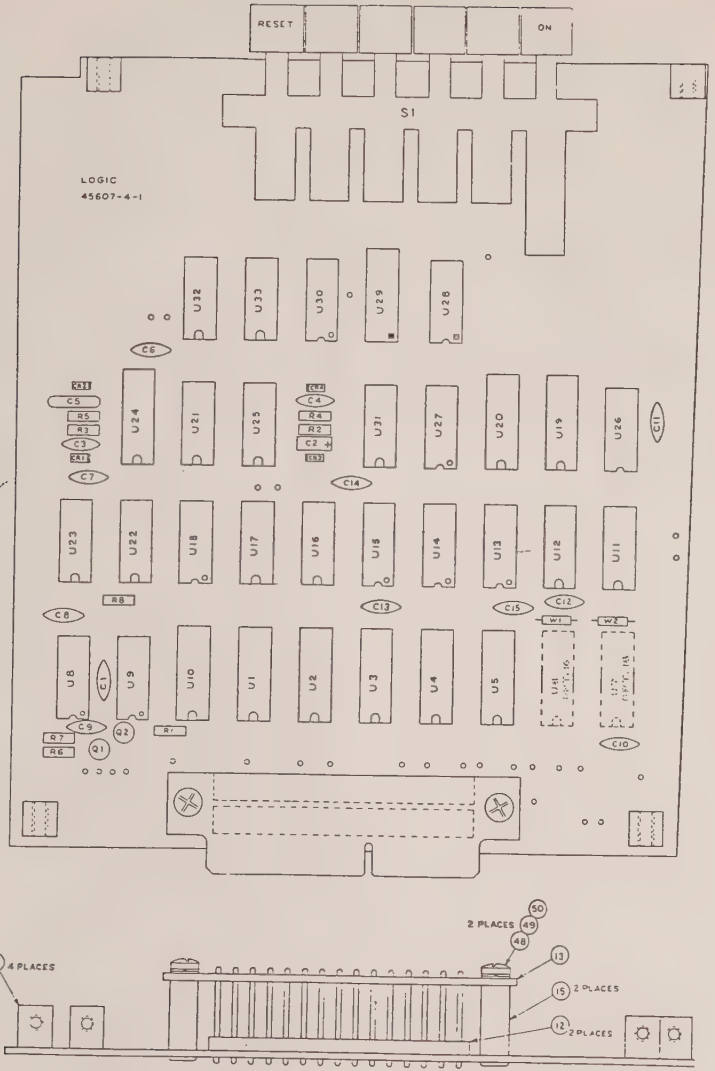
FRONT PANEL ASSEMBLY
#45571-4-1 REV B



NOTES: (UNLESS NOTED)

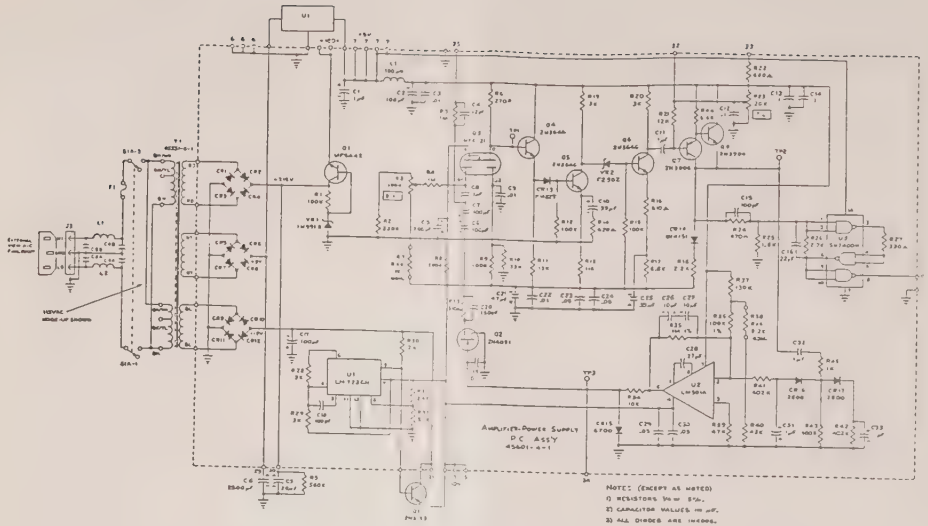
1. ALL CAPACITORS IN μf.
2. ALL RESISTORS 1/4W, 5%.

BLOCK DIAGRAM MODEL 6202
#45602-7-1 REV A

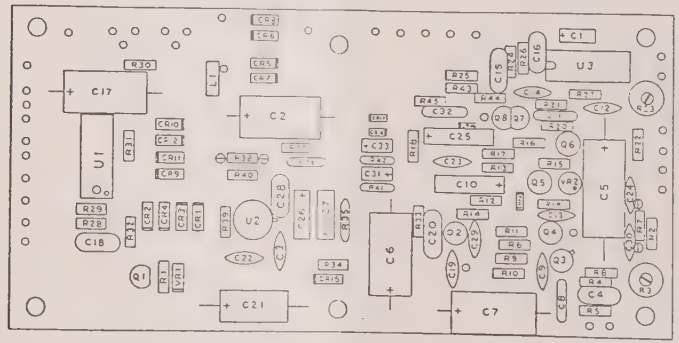


A1, LOGIC ASSEMBLY #45607-4-1 REV A

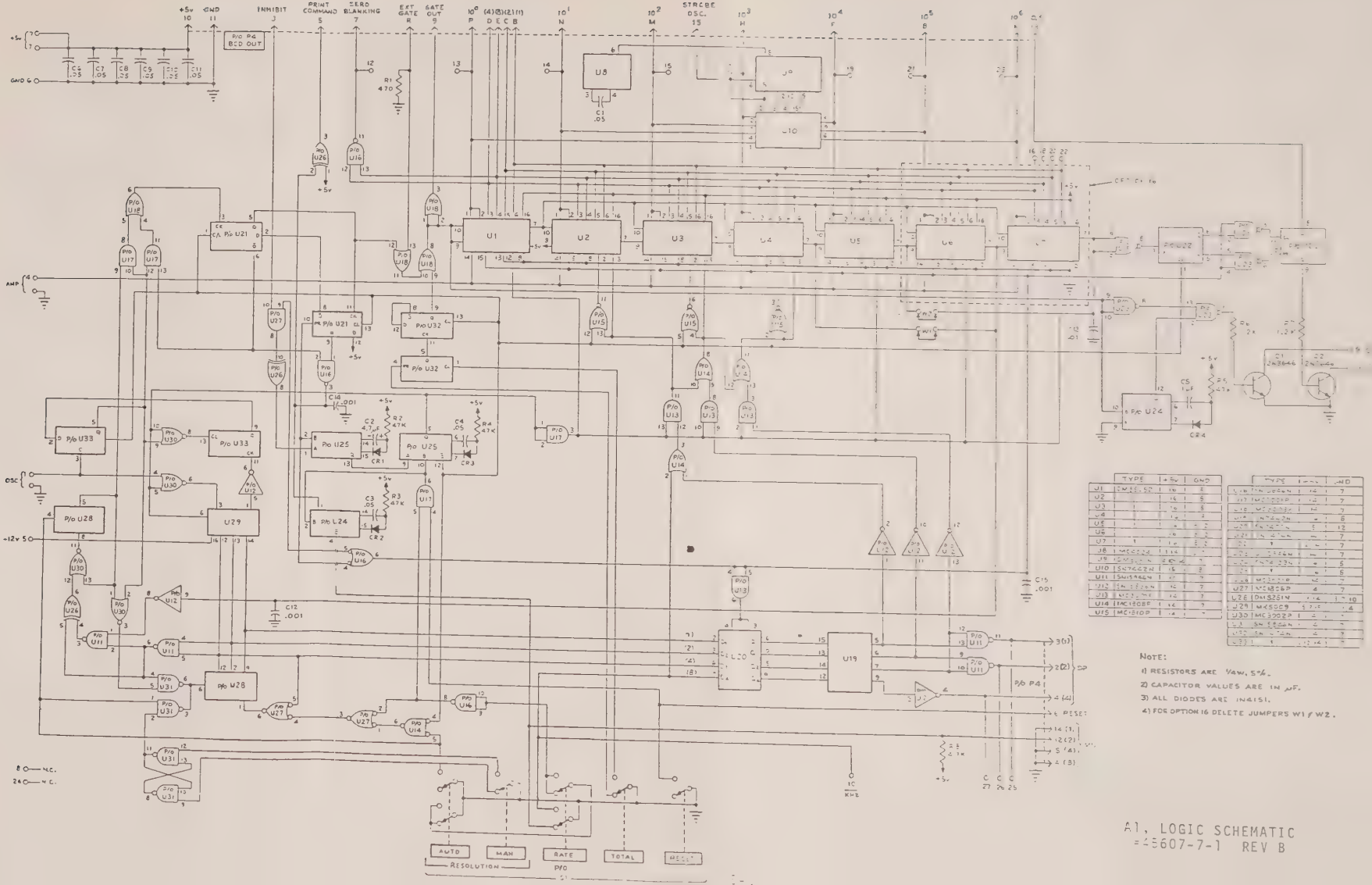
6202-12-73



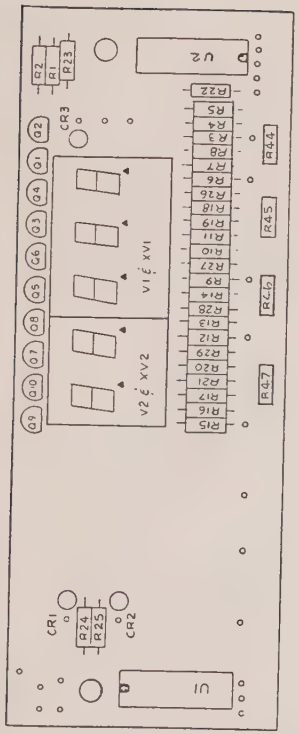
A2, AMPLIFIER-POWER SUPPLY SCHEMATIC #45601-7-1 REV B



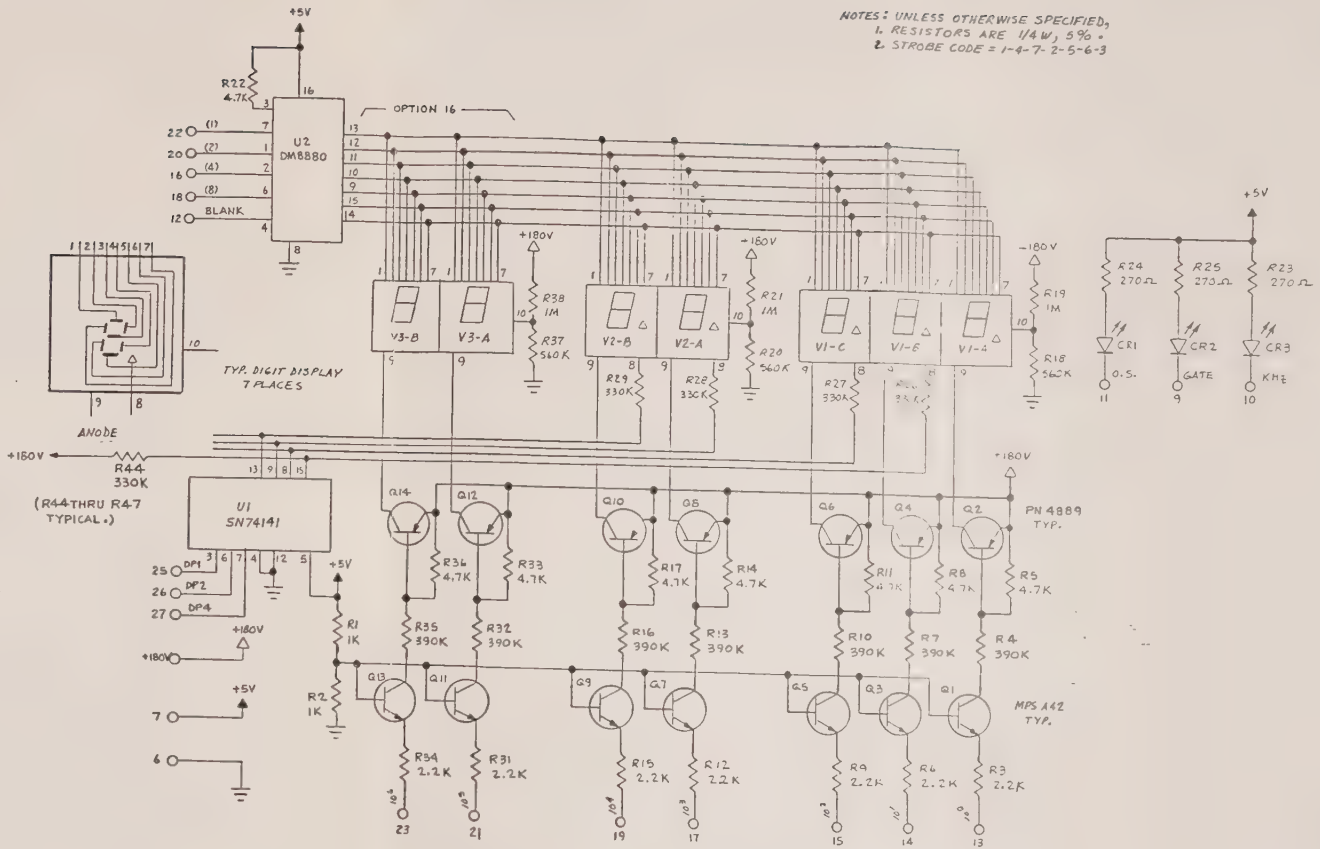
A2, AMPLIFIER-POWER SUPPLY
ASSEMBLY #45601-4-1 REV B



A1, LOGIC SCHEMATIC
=25607-7-1 REV B

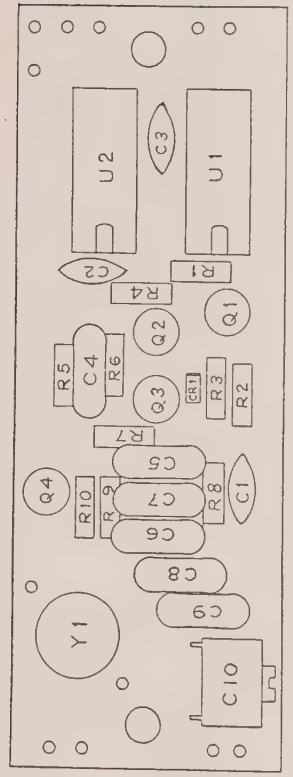


A3, READOUT ASSEMBLY #45586-4-3 REV B



A3, READOUT SCHEMATIC
#45586-7-3 REV B

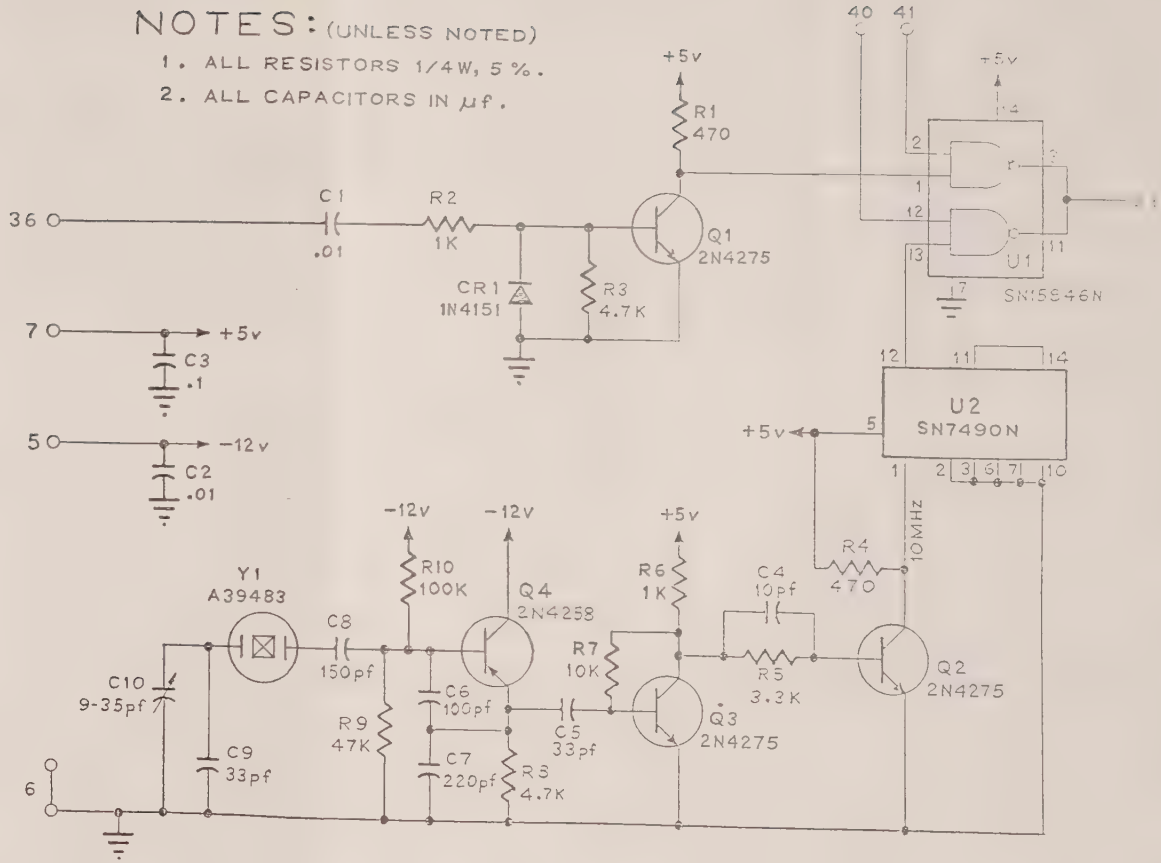
6202-12-73



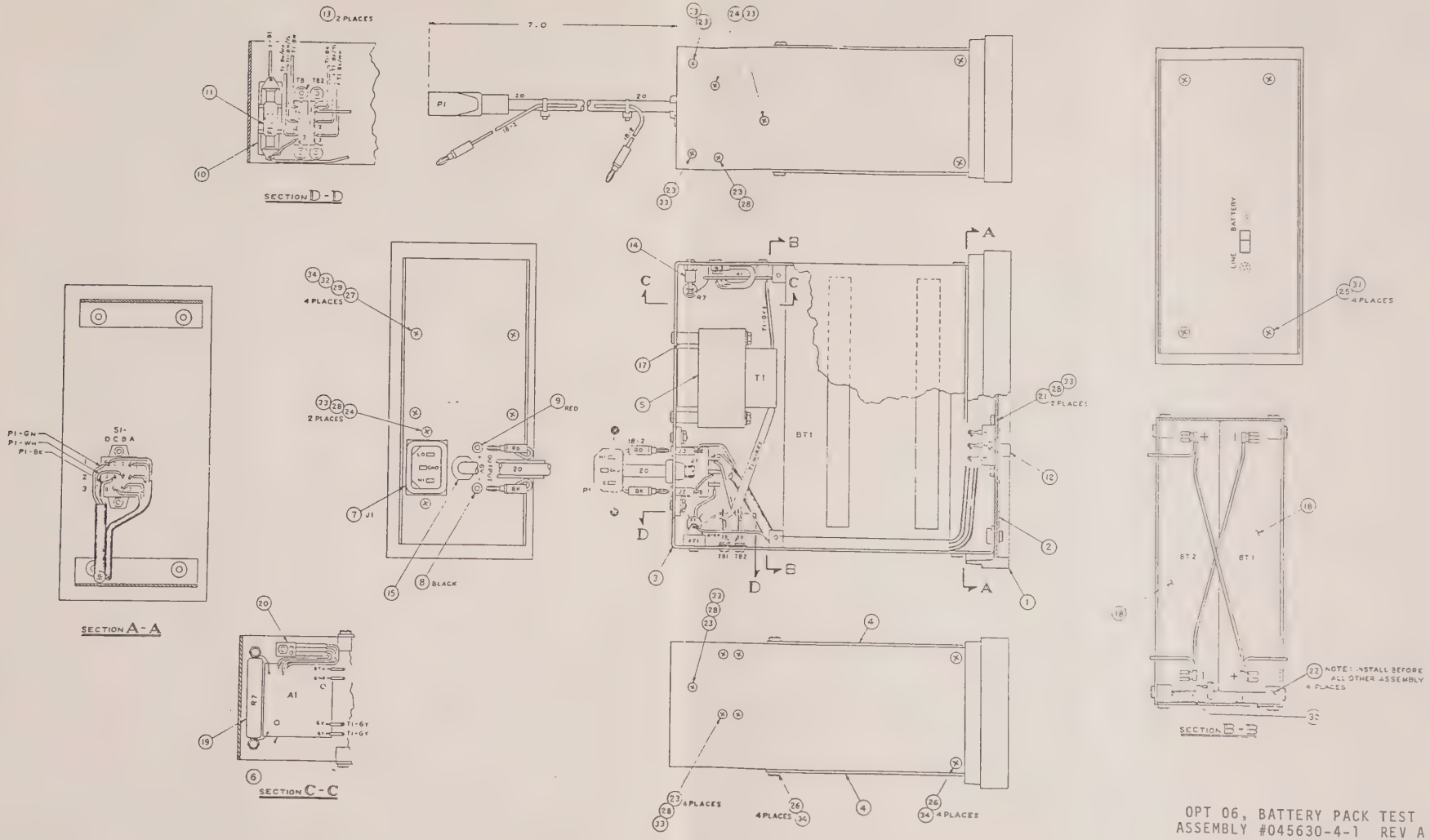
A4, OSCILLATOR ASSEMBLY #45604-4-1 REV A

NOTES: (UNLESS NOTED)

1. ALL RESISTORS 1/4W, 5%.
2. ALL CAPACITORS IN μf.

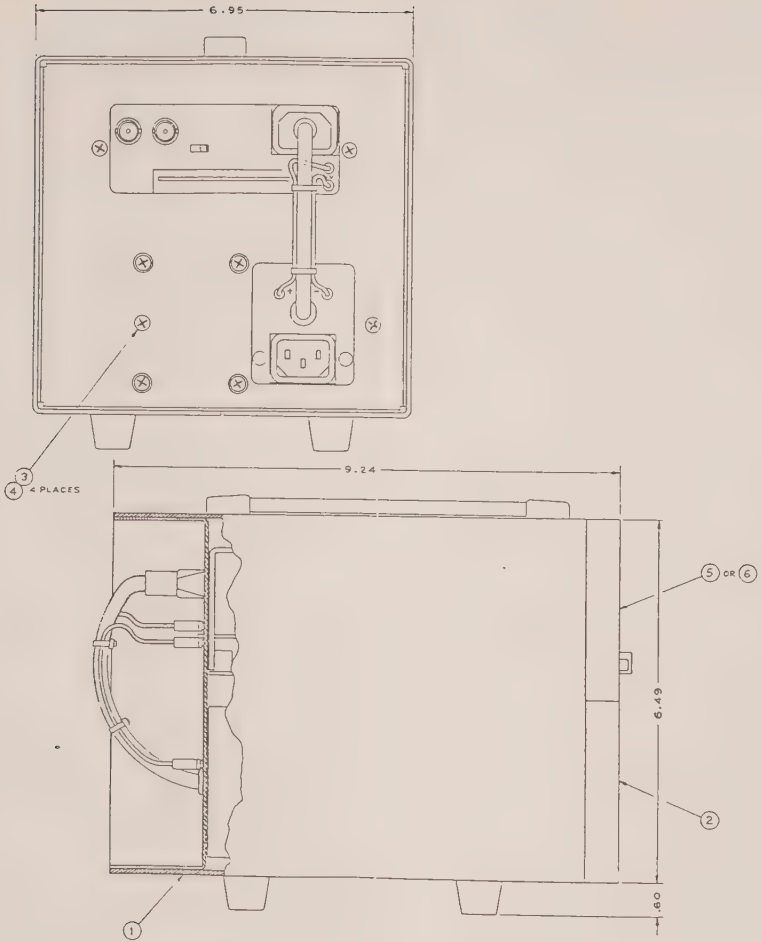


A4, OSCILLATOR SCHEMATIC
#45604-7-1 REV A

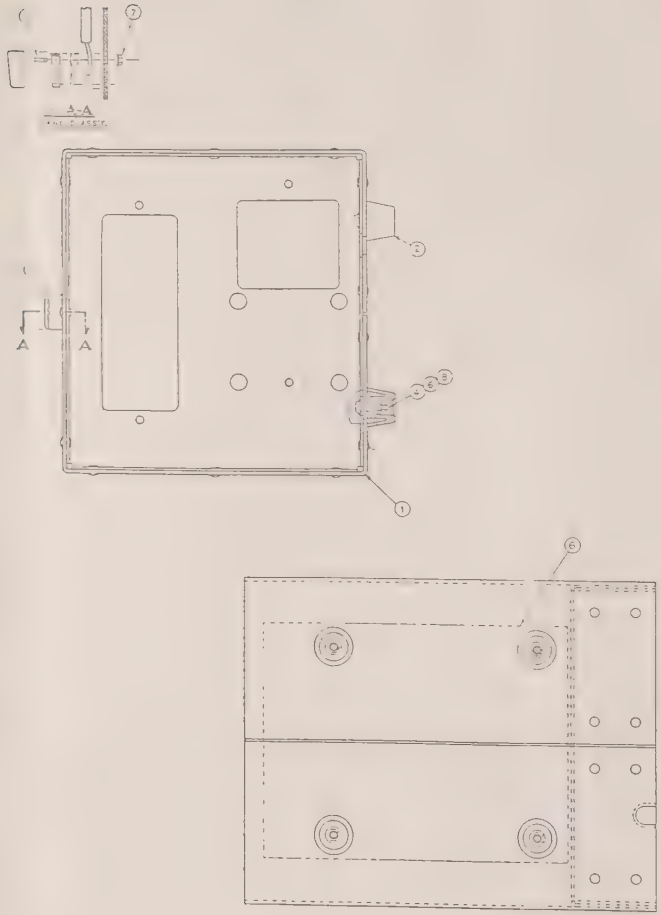


OPT 06, BATTERY PACK TEST
ASSEMBLY #045630-4-1 REV A

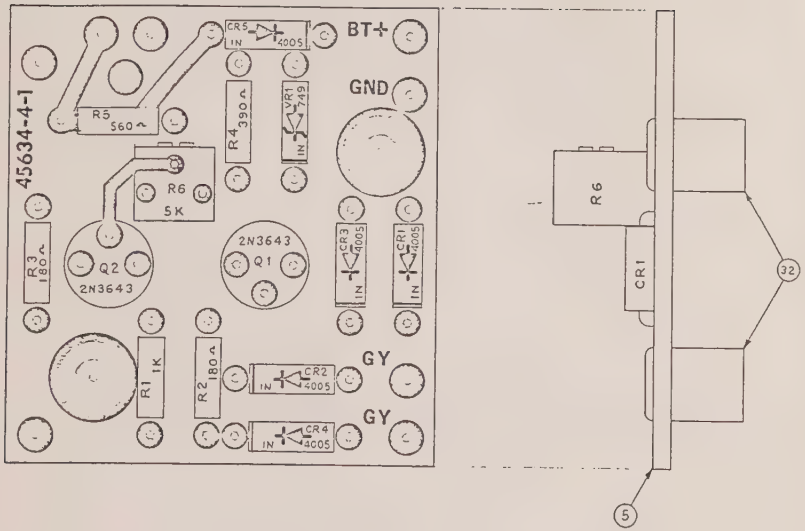
6202-12-73

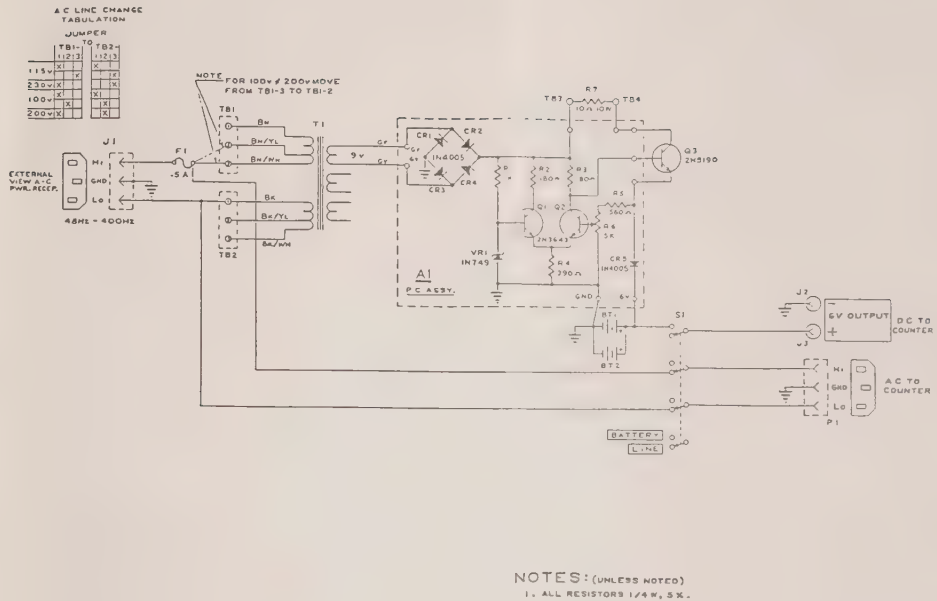


OPT 06, BATTERY PACK ASSEMBLY #045629-4-1 REV A



OPT 06, ENCLOSURE ASSEMBLY
#045635-4-1 REV A

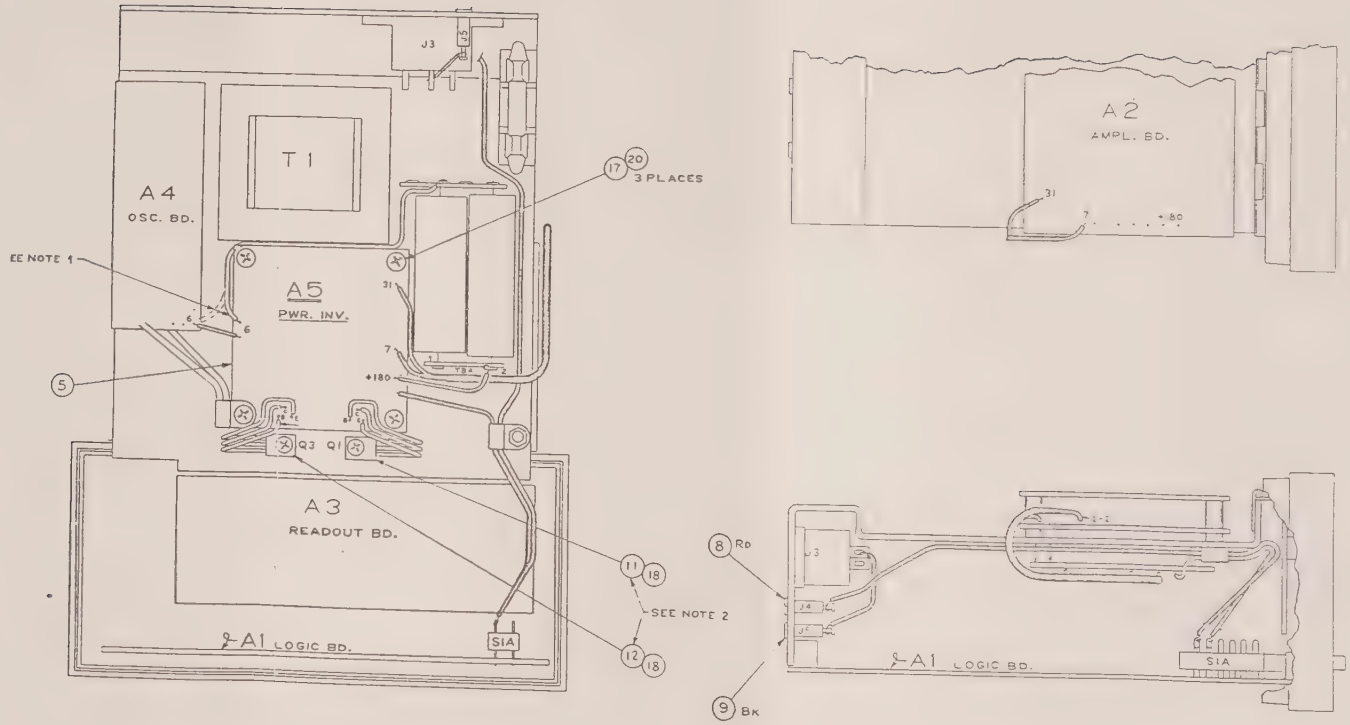




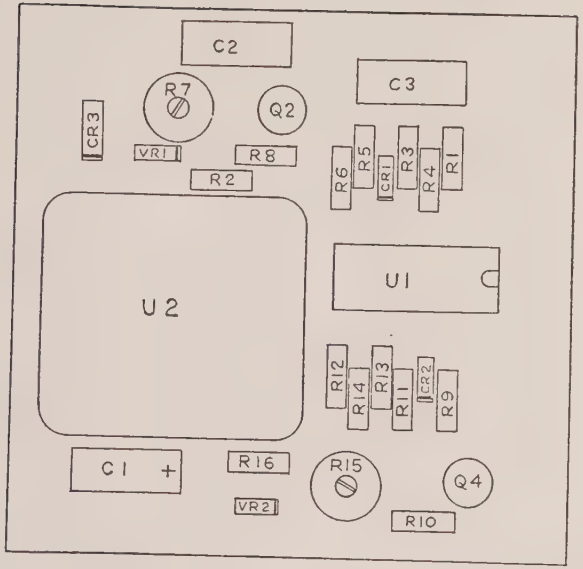
NOTES: (UNLESS NOTED)
1. ALL RESISTORS 1/4 W, 5%.

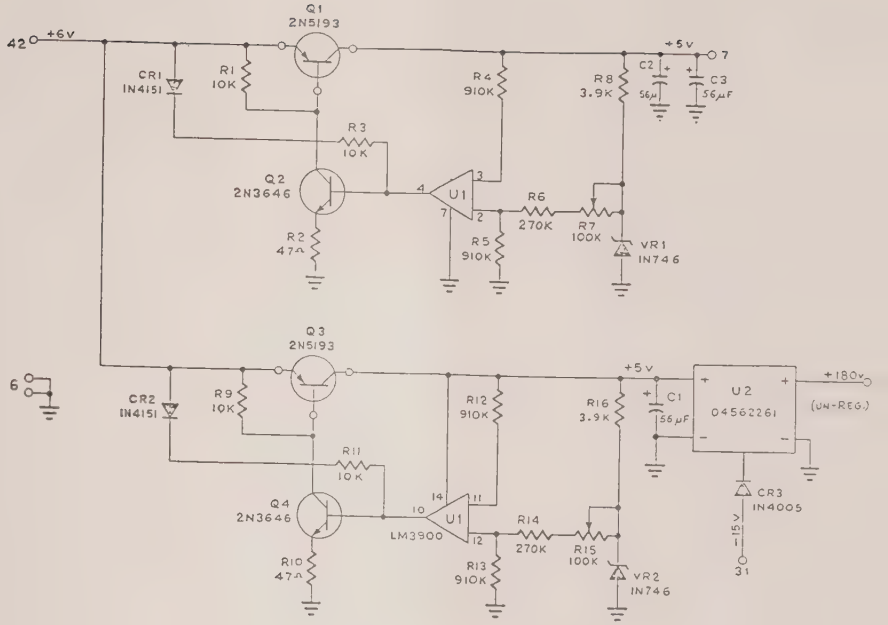
OPT 06, BATTERY PACK PC ASSEMBLY #045634-4-1 REV A

OPT 06, BATTERY PACK PC SCHEMATIC #045629-7-1 REV A



OPT 07,
POWER INVERTER ASSEMBLY
#04579641 REV A





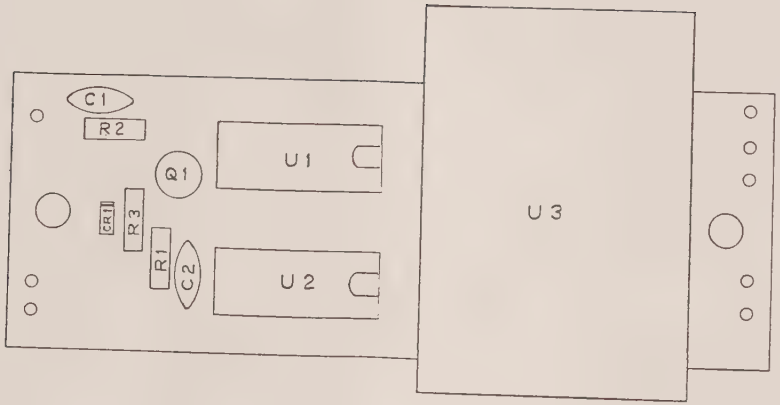
NOTES:

1. ALL RESISTORS 1/4W, 5%.

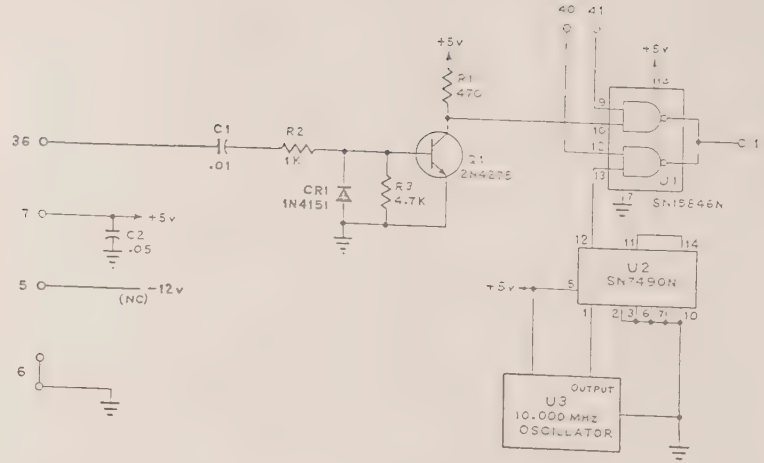
OPT 07, A5, POWER INVERTER ASSEMBLY #04562541 REV A

6202-12-73

OPT 07, A5, POWER INVERTER
SCHEMATIC #04562571 REV A



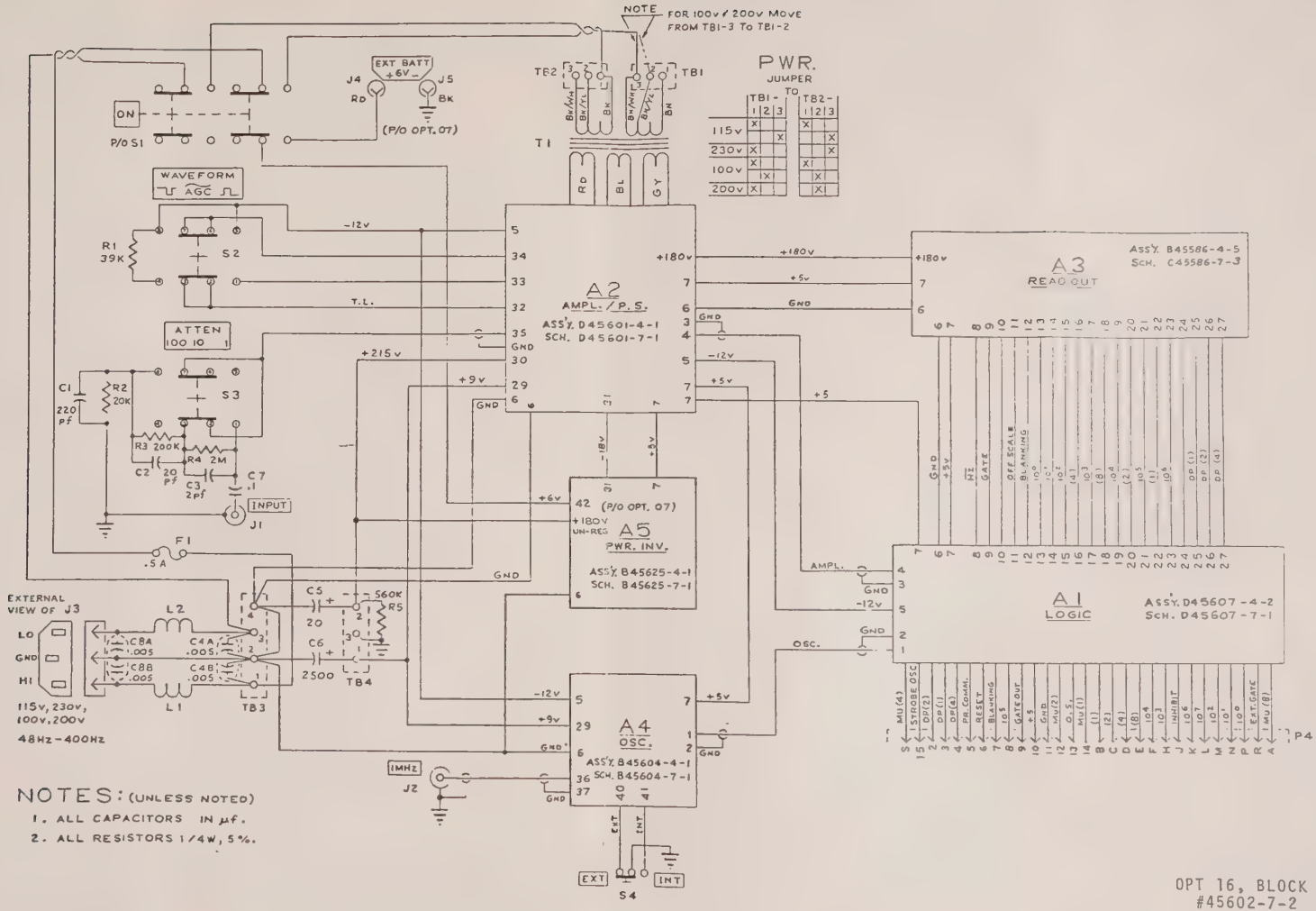
OPT 08, TCXO OSCILLATOR ASSEMBLY #45605-4-1 REV A



NOTES: (UN LESS NOTED)

1. ALL RESISTORS 1/4 W, 5%.
2. ALL CAPACITORS IN μf.

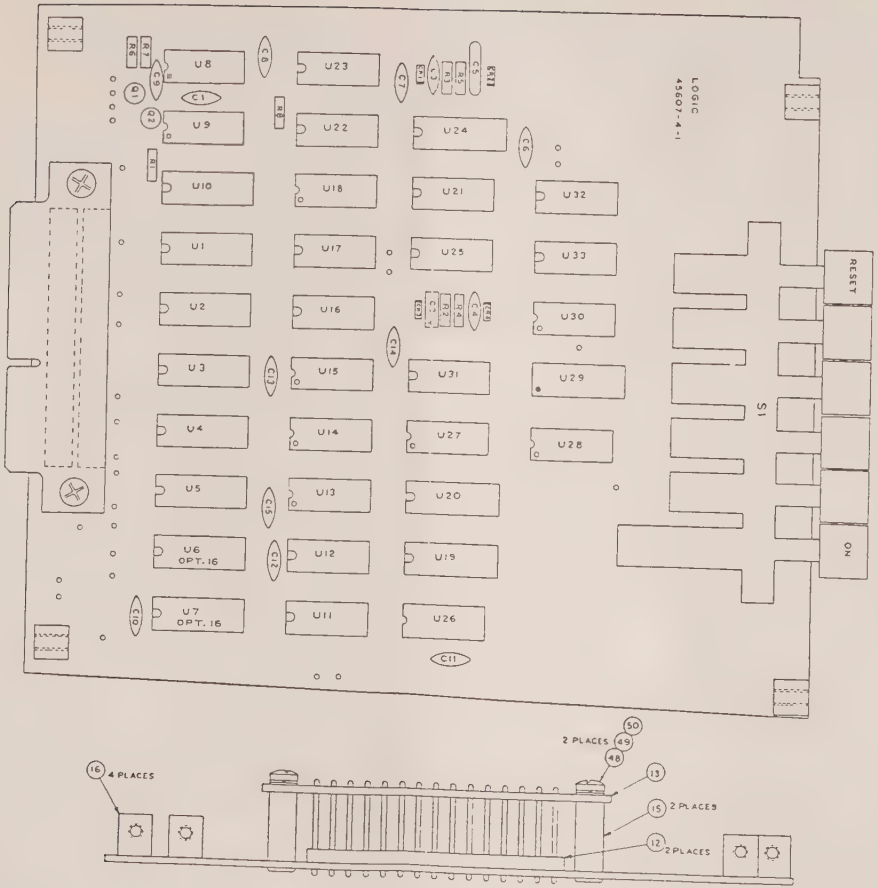
OPT 08, TCXO OSCILLATOR
SCHEMATIC #45605-7-1 REV A



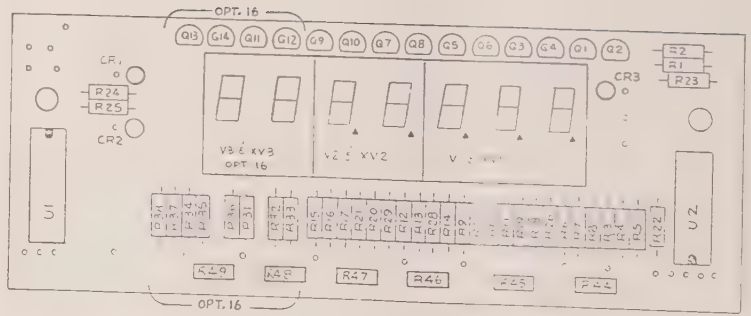
NOTES: (UNLESS NOTED)

1. ALL CAPACITORS IN μf.
2. ALL RESISTORS 1/4W, 5%.

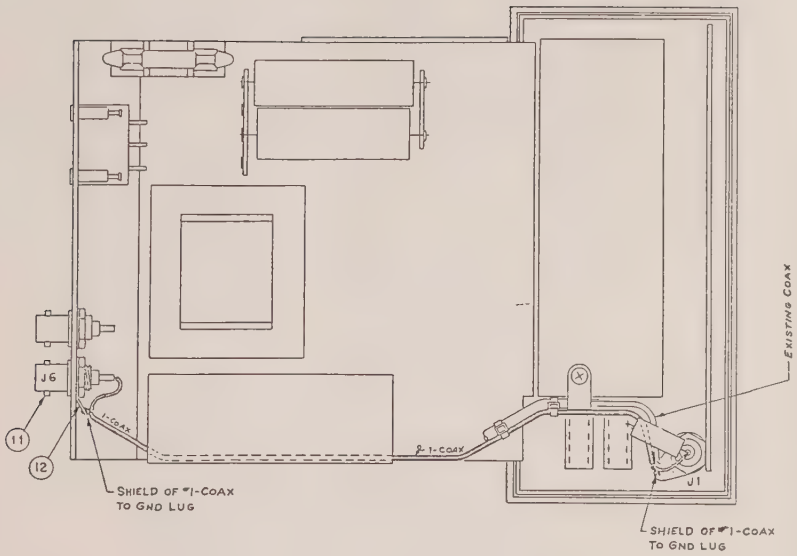
OPT 16, BLOCK DIAGRAM
#45602-7-2 REV A



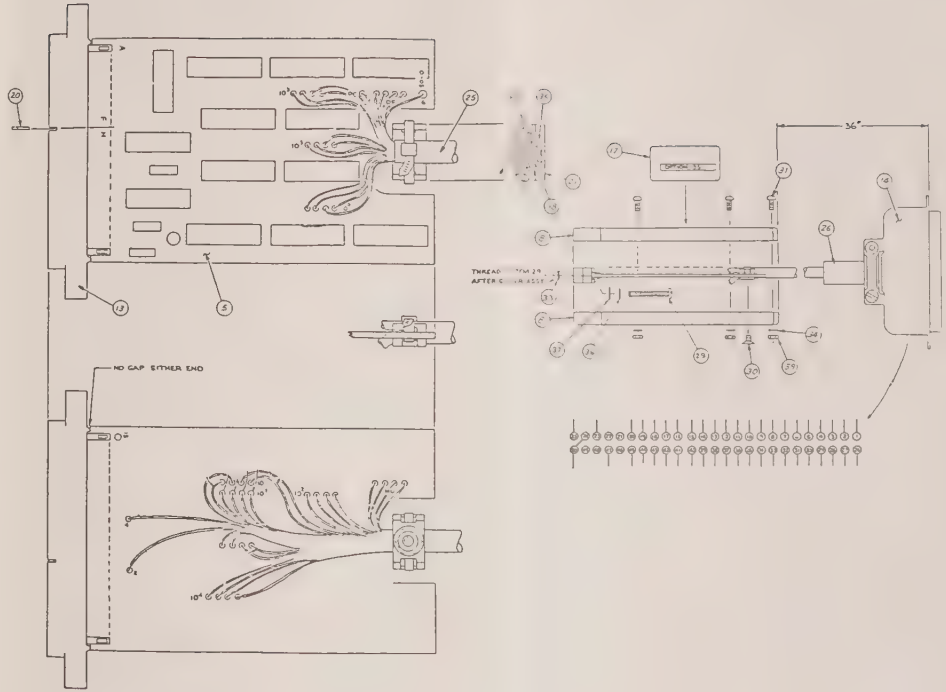
OPT 16, LOGIC ASSEMBLY #45607-4-2 REV A



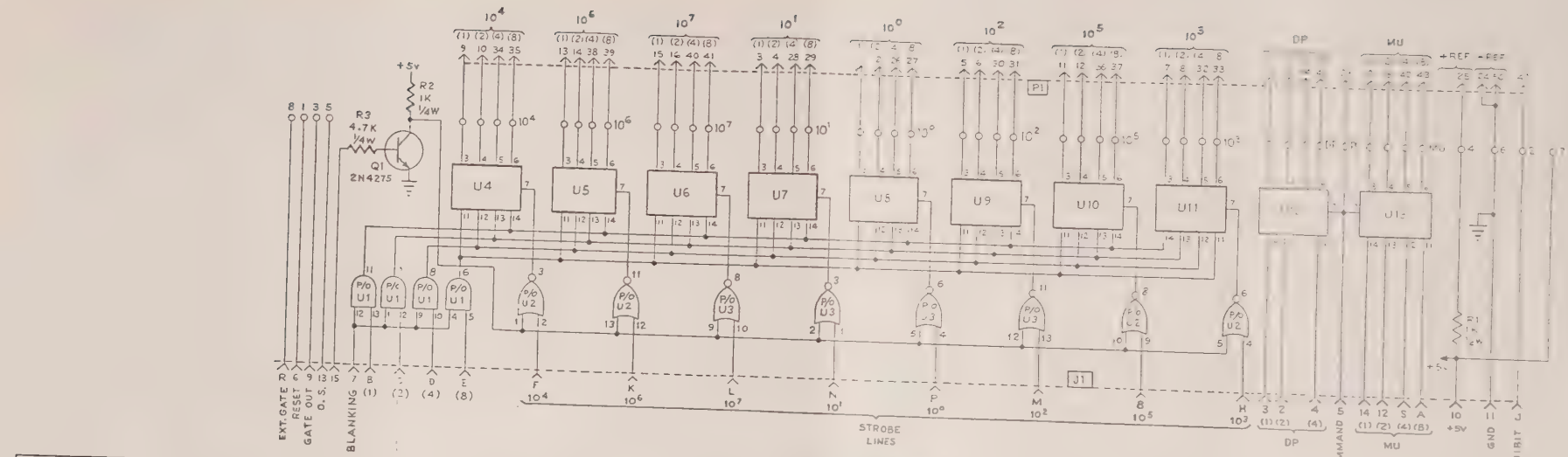
OPT 16, READOUT ASSEMBLY
#45586-4-5 REV B

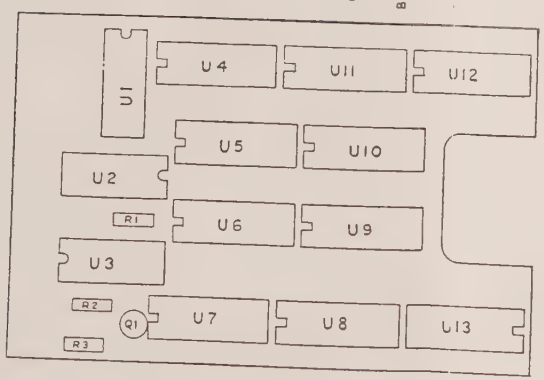


OPT 31, REAR INPUT ASSEMBLY #053056 REV A



OPT 35, SERIAL TO PARALLEL
BCD CONVERSION ASSEMBLY
#45787-4-1 REV A





	TYPE	+5v	GND
U1	MC1506F	14	7
U2	MC1810P	14	7
U3	MC1310P	14	7
U4	DM85LS1N	16	1,2,8,9,10,15
U5			
U6			
U7			

	TYPE	+5	GND
U8	DM85LS1N		
U9			
U10			
U11			
U12			
U13			

OPT 35, BCD CONVERSION
ASSEMBLY #45603-4-1 REV A
SCHEMATIC #45603-7-1 REV A

CHAPTER 6
SPECIAL MODIFICATIONS

6.1 INTRODUCTION

Modifications to the Model 6202, requested by the customer, are documented in this chapter. These are usually extra-cost items to tailor the unit for a specific application.

MODEL 6202
SUPPLEMENTAL INFORMATION
A1, LOGIC ASSEMBLY
SCHEMATIC #045607-7-1

1. CIRCUIT DESCRIPTION

The input gating circuit has been modified in the following manner:

a) U8 and C1 have been removed from the Logic Assembly.

b) A 14 pin socket, XA1A1, plugs into the XA1U8 socket.

c) A sub-assembly, A1A1, has been fabricated. This mounts A1A1U1 and A1A1U2. A1A1U2 was formerly designated A1U8.

d) The input gating circuit has been modified to route through A1A1U1.

e) Connections to A1A1U2 are the same as the connections to A1U8 which has been removed.

2. NEW DRAWINGS

05370301 REV A	Oscillator and Gate Assembly
7-05370301 REV A	Oscillator and Gate Schematic
45607-7-1 REV B SUPPLEMENT	A1 Logic and A1A1 Oscillator and Gate Interconnect Schematic
45607-4-1 REV B SUPPLEMENT	Logic Assembly

3. PARTS LISTS

Make the following changes to the A1, Logic Assembly Parts List.

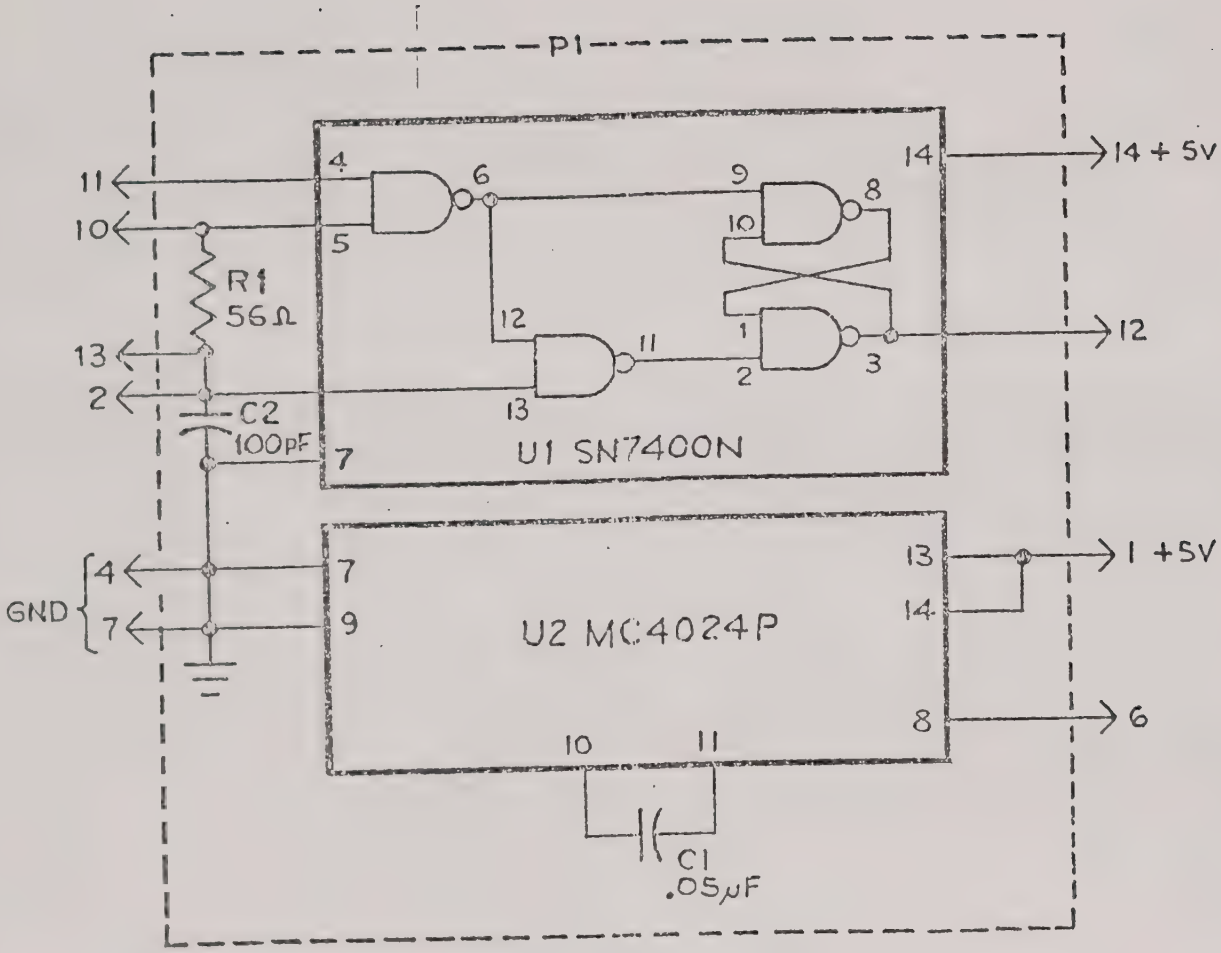
DELETE

REF	DESCRIPTION	SD STOCK NO.
C1	Capacitor, Disc, Ceramic: .05 µF, +80-20%, 10 V	C0672
U8	Integrated Circuit: Dual VC Multivibrator, TTL	045206

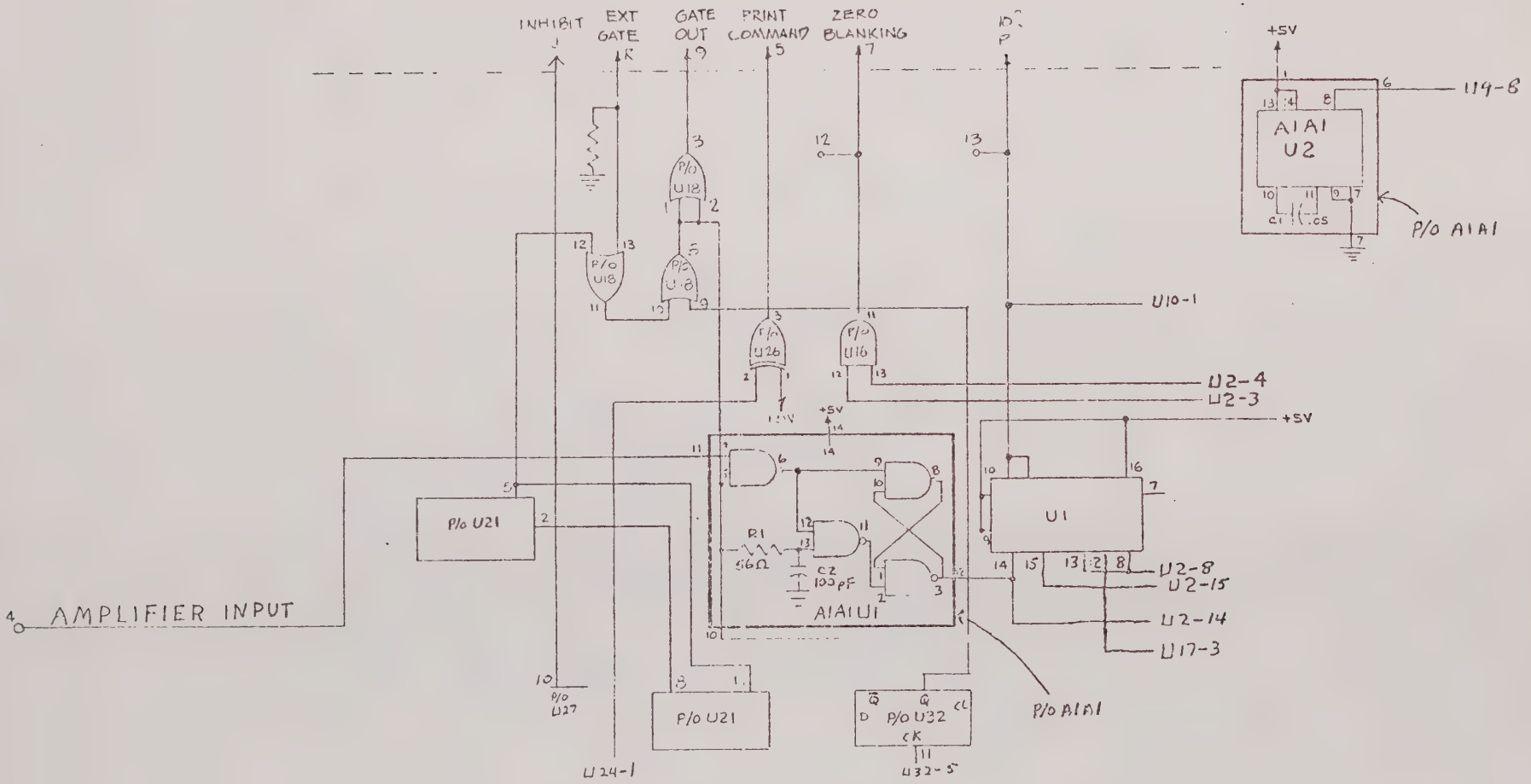
ADD

A1A1	Oscillator and Gate Assembly Consisting of:	05370301
C1	Capacitor, .05 µF, 12 V	100122
C2	Capacitor, 100 pF, 500 V, DM10	100252
P1	Plug, 14 pin male DIP	103023
R1	Resistor, 56 Ω 5%, 1/8 W	101816
U1	Integrated Circuit, SN7400N	019705
U2	Integrated Circuit, MC4024P	045206

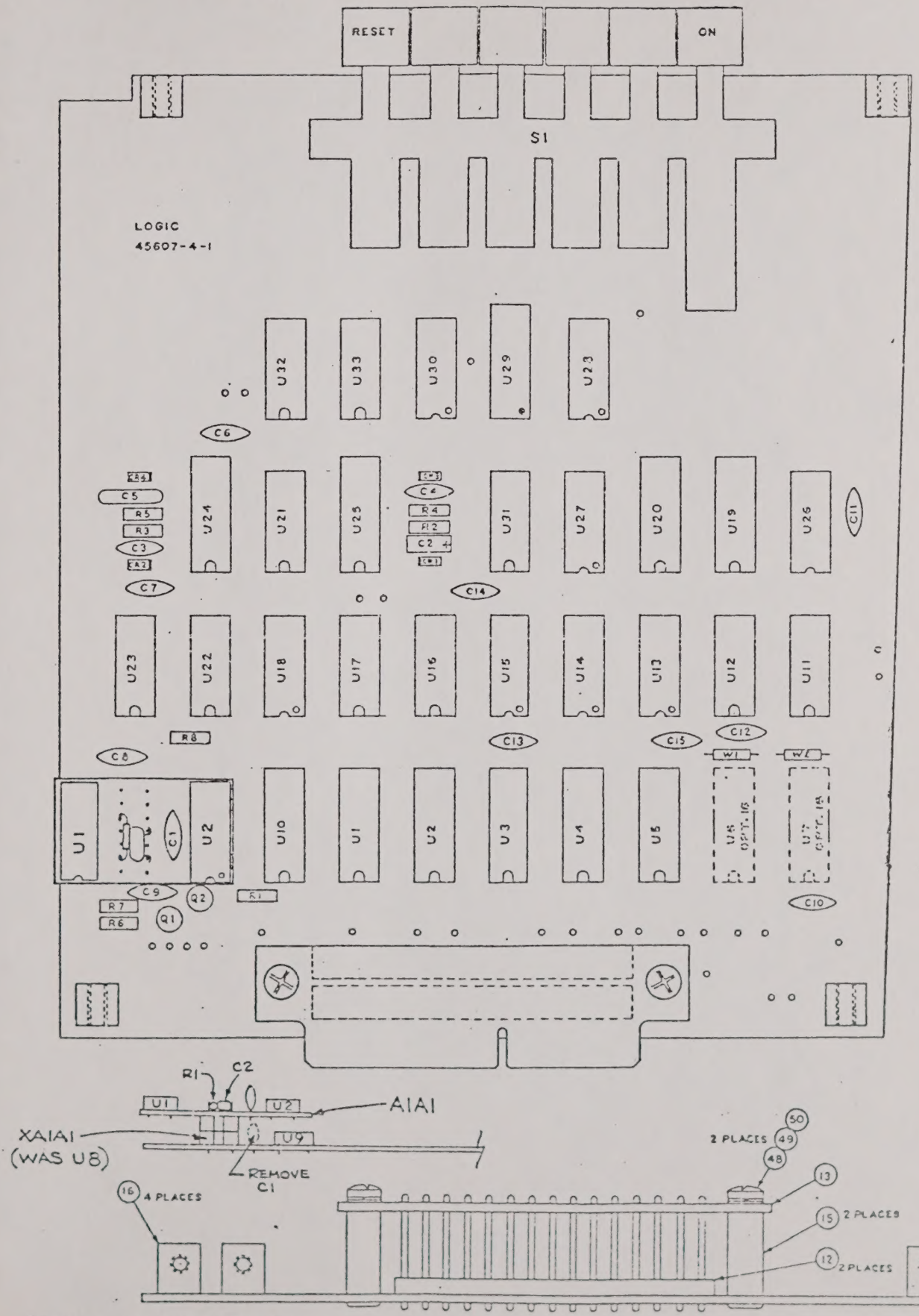
OSCILLATOR AND GATE ASSEMBLY #05370301 REV A



OSCILLATOR AND GATE SCHEMATIC #7-05370301 REV A



A1 LOGIC AND A1A1 OSCILLATOR AND GATE INTERCONNECT SCHEMATIC #45607-7-1 REV B



LOGIC ASSEMBLY #45607-4-1 REV B

www.manualsplus.com
1025109